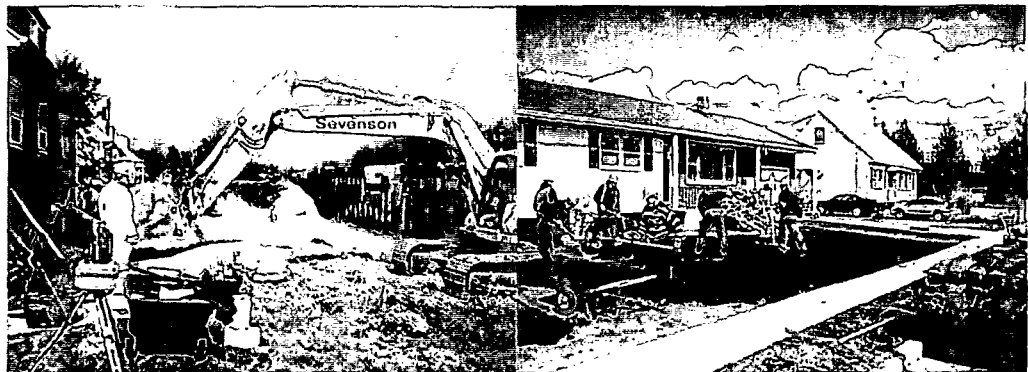
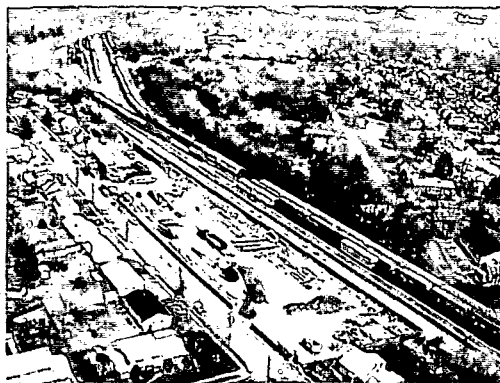


## U. S. Army Corps of Engineers Kansas City District

### Federal Creosote Superfund Site OU2 Phase 1 Remedial Action Report

July 2005



# REMEDIAL ACTION REPORT

## OU2 PHASE 1 REMEDIAL ACTION FEDERAL CREOSOTE SUPERFUND SITE MANVILLE, NEW JERSEY

CONTRACT NO.: DACW41-01-D-0001

### PREPARED FOR

USACE - KC DISTRICT  
601 East 12<sup>th</sup> Street  
Kansas City, MO 64106

### PREPARED BY

CDM FEDERAL PROGRAMS CORPORATION  
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July 2005

500759

**REMEDIAL ACTION REPORT  
RECORD OF PREPARATION, REVIEW, AND APPROVAL  
FEDERAL CREOSOTE SUPERFUND SITE  
MANVILLE, NEW JERSEY  
OU2 PHASE 1 REMEDIAL ACTION**

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This report has been prepared in accordance with EPA OSWER 9320.2-09A and will be used as a basis for development of the site Project Closure Report.





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# List of Acronyms and Abbreviations

ACGs	Analytical Cleanup Goals
AAMP	Ambient Air Monitoring Plan
ATSDR	Agency for Toxic Substances and Disease Registry
bgs	below ground surface
BTEX	Benzene, Toluene, Ethyl Benzene, and Xylene
CDM	CDM Federal Programs Corporation
CIH	Certified Industrial Hygiene
CQCP	Contractor Quality Control Plan
CRZ	Contamination Reduction Zone
CY	Cubic Yard
DAR	Design Analysis Report
DSWP	Discharge to Surface Water Permit
DOT	Department of Transportation
EE/CA	Engineering Evaluation/Cost Analysis
ERT	Environmental Response Team
EPA	U.S. Environmental Protection Agency
FFS	Focused Feasibility Study
GPD	Gallon per Day
GPPC	General Petroleum Products Cleanup
GPR	Ground Penetrating Radar
GPM	Gallons per minute
ID	Inner Diameter
J/C	Joint Compound
LDR	Land Disposal Requirements
MS	Matrix Spike
MSD	Matrix Spike Duplicate
msl	Mean Sea Level
MTBE	Methyl Tertiary Butyl Ether
NAEVA	NAEVA Geophysics, Inc.
NJAC	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
NJPDES	New Jersey Pollutant Discharge Elimination System
NPL	National Priority List
O&M	Operation & Maintenance
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PAH	Polycyclic Aromatic Hydrocarbons
ppb	Parts per Billion
ppm	Parts per Million
PRAC	Pre-placed Remedial Action Contractor

PSE&G	Public Service Electric & Gas
QA	Quality Assurance
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
RPM	Remedial Project Manager
ROD	Record of Decision
SAP	Sampling and Analysis Plan
SES	Sevenson Environmental Services, Inc.
SCSCD	Somerset County Soil Conservation District
SOP	Standard Operating Procedures
SSHP	Site Safety & Health Plan
SVOC	Semi-Volatile Organic Compounds
TCE	Trichloroethylene
TCLP	Toxicity Characteristic Leaching Procedure
TEM	Transmission Electron Microscopy
TOC	Total Organic Carbon
TPH	Total Petroleum Hydrocarbons
TRRF	Tullytown Resource Recovery Facility
TSDF	Treatment Storage and Disposal Facility
TSS	Total Suspended Solids
USACE	U.S. Army Corps of Engineers
UTS	Universal Treatment Standards
VOC	Volatile Organic Compounds



Section 1

1

# Section 1

## Introduction

U.S. Army Corps of Engineers (USACE) Kansas City provided technical support to the U.S. Environmental Protection Agency (EPA) during the Operable Unit (OU) 2 Phase 1 remediation at the Federal Creosote Superfund site. In support of these efforts, the USACE contracted with Severson Environmental Services, Inc. (SES) to perform the remedial construction in accordance with the project design documents. The work was performed under Pre-Placed Remedial Action Contract (PRAC) DACW41-01-D-0001.

The objective of the project was to remediate the contaminated soil within the OU2 Phase 1 properties that may pose risks to human health and may continue to be a source of groundwater contamination.

USACE retained the services of CDM Federal Programs Corporation (CDM) to perform the remedial design and to prepare the remedial action report. The design was performance-based. Minimum requirements were presented to allow the contractor to develop the methods and procedures for accomplishing the design objectives. All work was performed in accordance with site-specific project plans prepared by SES. Each plan was submitted to USACE for approval prior to commencement of field activities.

A pre-construction conference meeting was conducted at the site office on February 7, 2002. Remedial action construction started in February 2002 and was completed in June of 2002. On December 18, 2002, upon correction of all construction deficiencies and submittal of outstanding project document, representatives of EPA, USACE and SES attended a final inspection.

### 1.1 Remedial Action Report Objectives

The objectives of this report are summarized below:

- Provide a summary of pertinent background information including site description, history, and discussion of OUs
- Present a detailed chronology of events for the remedial action effort
- Present an extended summary of the project performance and construction quality control standards instituted by SES to ensure the successful completion of the remedial action
- Present summary of pre-remedial and remedial action activities completed over the course of the project

- Present a summary of unusual events encountered during the completion of site activities
- Present a summary of lessons learned
- Present a summary of the project final inspection
- Present a summary of SES's operation and maintenance obligations relative to site restoration
- Present a summary of the project costs

## 1.2 Site Description

The Federal Creosote Superfund site, which includes a 137-property residential community known as the Claremont Development and a commercial area known as the Rustic Mall, is located in the Borough of Manville, Somerset County, New Jersey. The site is over 50 acres and is bordered to the north by the Norfolk Southern Railroad, to the southeast by the CSX Railroad, to the south by East Camplain Road, and to the west by South Main Street.

The site is located on a topographic high within the Raritan River watershed system. The Raritan River passes approximately 2,000 feet north and east of the site, and the Millstone River, a tributary of the Raritan, is located approximately 1,200 feet to the southeast. The confluence of the two rivers lies approximately one mile east of the site.

## 1.3 Site History

The Federal Creosote site was the site of the former American/Federal Creosote Wood Treatment facility, which operated from approximately the 1910s to 1957. The plant operated as a wood (e.g., railroad ties) treatment facility that used creosote as a preservative. Historic aerial photographs indicate that the main wood treatment facility was located in the southwest corner of the site, where the Rustic Mall is currently located. The wood treatment facility included several large buildings, a pressure cylinder, and five vertical storage tanks.

Two lagoons and associated canals that serviced the facility were located in the north central and southeast sections of the site. The lagoons and canals are believed to have contained liquid waste generated from the creosote wood preservation operation. The lagoon in the north central section of the site and its associated canal are referred to as Lagoon A and Canal A, respectively. The lagoon and canal in the south portion of the site are referred to as Lagoon B

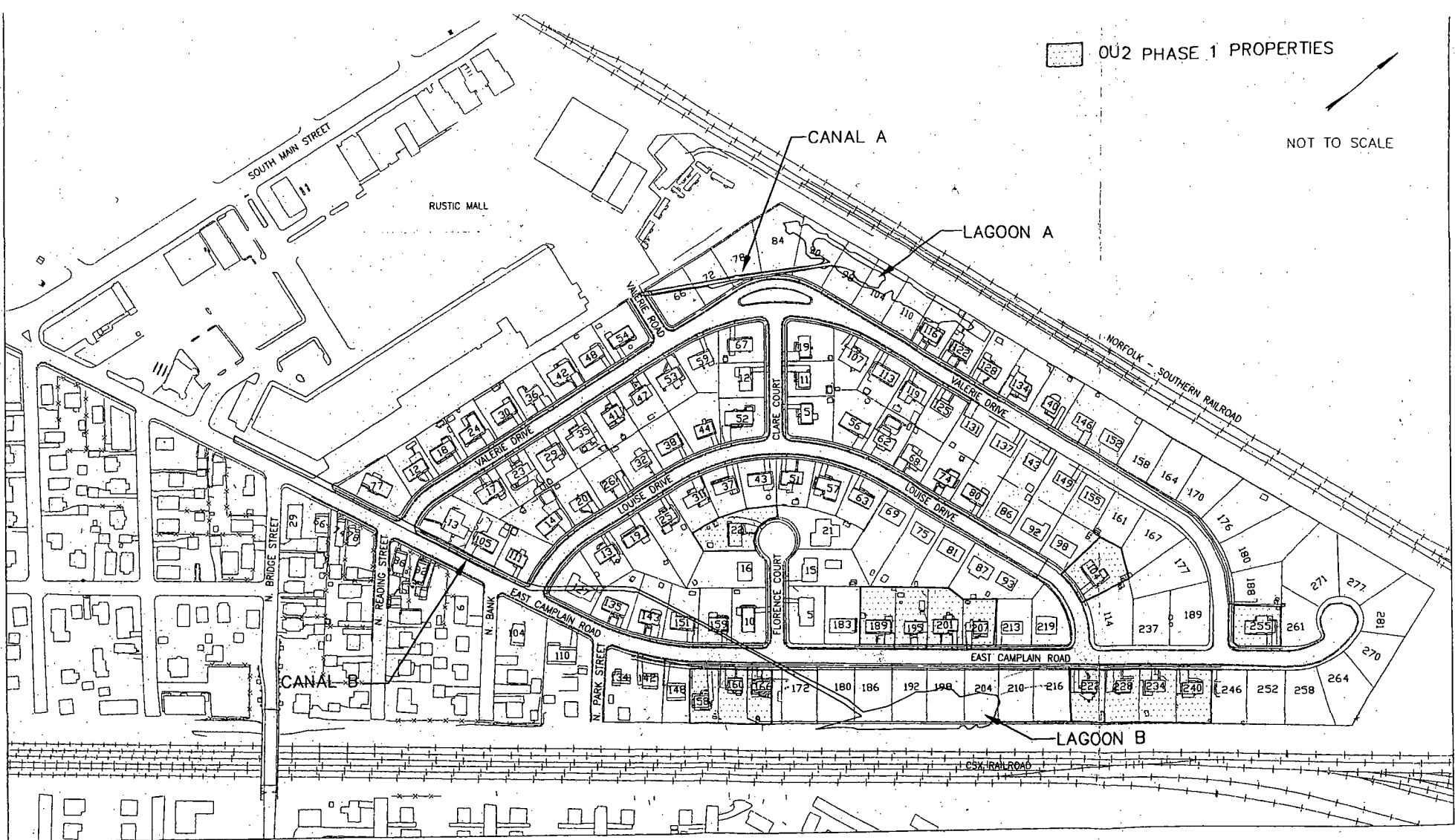
and Canal B, respectively. Additionally, several impoundments, standing liquid areas, and stained areas were identified northeast of the main treatment facility. Figure 1-1 shows the lagoons and canals superimposed on a map of the present development.

According to historic aerial photographs, the central portion of the site was mainly an open lumber storage yard, containing stacks of wood material such as untreated lumber, poles, beams, and railroad ties. Darker-toned, apparently treated wood was located in an area referred to as the drip area, which occupied the northern portion of the open lumber storage yard, and along the northern rail spurs and loading platform.

Beginning in 1962, the 137 residential unit Claremont Development was constructed in the areas of this site that were the lagoons, canals, drip areas and lumber storage areas. The lagoons and the canals were reportedly filled in, without removing the waste from the lagoons, during the residential community development. The southwestern portion of the site was developed into the Rustic Mall.

In April 1996, the New Jersey Department of Environmental Protection (NJDEP) responded to an incident involving the discharge of an unknown liquid from a sump located at one of the Claremont Development residences on Valerie Drive. A thick, tarry substance was observed flowing from the sump to the street. In January 1997, the Borough of Manville responded to a complaint that a sinkhole had developed around a sewer pipe in the Claremont Development along East Camplain Road. Excavation of the soil around the pipe identified a black tar-like material in the soil. Subsequent investigations of these areas revealed elevated levels of contaminants consistent with creosote.

In October 1997, EPA's Environmental Response Team (ERT) initiated a site investigation limited to properties believed to contain creosote contamination based on analysis of historic aerial photographs as well as input from residents. This investigation included the collection of surface and subsurface soil samples at select locations within the residential development. The result of this investigation indicated that the contamination was extensive, uncontrolled, and had impacted sediment, soil and groundwater in the area.



FEDERAL CRESOTE SUPERFUND SITE  
MANVILLE, NEW JERSEY

FIGURE 1-1  
REMEDIAL ACTION REPORT  
OU2 PHASE 1

CDM

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From February through April 1998, EPA collected over 1,350 surface soil samples on 133 properties in and adjacent to the Claremont Development in order to determine if an immediate health risk existed. EPA identified some properties with surface soil in yards containing elevated levels of creosote posing a long-term health risk. As a result, EPA applied topsoil, mulch, seed and sod to 11 of the properties that contained elevated levels of creosote in surface soils, to limit the potential for exposure.

In February 1999, the Agency for Toxic Substances and Disease Registry (ATSDR) completed a health consultation that assessed the public health impact from direct contact with the surface soils. ATSDR concluded that the surface soil concentrations of lead, arsenic and Polycyclic Aromatic Hydrocarbons (PAHs) do not pose a public health hazard.

In November 1998, EPA initiated a remedial investigation and feasibility study (RI/FS) to more fully characterize the nature and extent of contamination at the site. Subsurface soil sampling started in December 1998 and was completed in March 1999.

The site was proposed for the National Priorities List (NPL) on July 27, 1998, and was formally placed on the NPL on January 19, 1999.

The data from the 1997/1998 investigation conducted by EPA indicated that *the canal and lagoon areas are the major sources of soil and groundwater contamination in the Claremont Development*. EPA then prepared an Engineering Evaluation/Cost Analysis (EE/CA) and a focused EE/CA, to evaluate remediation options for the lagoon and canal source materials. The focused EE/CA concentrated on the preferred remedy of demolition of structures and excavation of the lagoon and canal material, with off-site treatment and disposal.

On September 28, 1999, EPA signed a Record of Decision (ROD) for the remediation of the lagoons and canals. The ROD designated the remediation of the lagoons and canals as OU1. EPA addressed the remaining site areas under separate Operable Units, according to the following:

OU 2 – Residual Levels of Creosote Contamination in the Claremont Development

OU 3 – Rustic Mall Contaminated Soil, Groundwater, Surface Water, and Sediment

In April 2000, EPA completed a Focused Feasibility Study (FFS) for OU2 based on surface soil sampling performed in 1998 and 1999. The FFS included a summary of the soil investigations and a Baseline Human Health Risk Assessment. The FFS also evaluated the alternatives for OU2 that addressed the surface and subsurface soil of the Claremont Development.

On September 29, 2000, EPA signed a ROD for OU2 addressing the soils contamination in the Claremont Development.

The OU2 properties were divided into two phases. Phase 1 consisted of properties in close proximity to the Lagoon B properties. The remaining OU2 properties were grouped into Phase 2. This allowed EPA to complete the remediation of properties in one section of the Claremont Development, which minimized the impacts to the residents.

#### **1.4 USACE and EPA Project Management**

USACE Kansas City District was responsible for the design and construction. USACE New York District was responsible for construction oversight. USACE NY provided full-time, on-site technical representative throughout the duration of the project. USACE representatives were responsible for assuring the project was executed in accordance with design documents and site-specific plans. USACE on-site representatives maintained a direct line of communication with SES's project management team and EPA Region II Remedial Project Manager (RPM). Weekly project meetings were held at the site throughout the duration of the field activities. Health and safety, work progress, field observations, problems and conflicts, schedule, submittals, quality control, changes, cost tracking, and community relations were discussed during these meetings.

Key project personnel included:

Rich Puvogel	EPA Region II - Remedial Project Manager
Todd Daniels	USACE - Kansas City District Project Manager
Gene Urbanik	USACE - New York District - Resident Engineer
Neal Kolb	USACE - New York District - Team Leader





## Section 2

### Operable Unit Background

The OU2 ROD specified excavation and off-site disposal of soils containing PAHs in excess of the Analytical Cleanup Goals (ACGs) from the Claremont Development. A summary of background information from the historic investigations is presented in this section.

OU2 was divided into two phases, in an effort to complete the work in the portion of the neighborhood near Lagoon B as soon as possible following completion of Lagoon B remediation. This report covers the OU2 Phase 1 remedial action, which includes the following properties:

158 East Camplain Road  
160 East Camplain Road  
166 East Camplain Road  
189 East Camplain Road  
195 East Camplain Road  
201 East Camplain Road  
207 East Camplain Road  
222 East Camplain Road  
228 East Camplain Road  
234 East Camplain Road  
240 East Camplain Road  
255 East Camplain Road  
22 Florence Court  
104 Louise Drive  
Rustic Mall Parking Lot (Support Zone)

#### 2.1 Geology

##### 2.1.1 Regional Geology

The site is underlain by approximately 25 to 35 feet of unconsolidated sediments of glaciofluvial origin, which in turn are underlain by Late Triassic siltstone and shale.

Stanford (1992) has mapped unconsolidated sediments in the vicinity of the site above altitude 50 feet relative to mean sea level (msl) as Upper Raritan Terrace Deposits. These Middle Pleistocene sands and gravels, which form a terrace about 20 to 30 feet above the present Raritan River alluvial plain, were associated with 60 to 100 feet of weathering and down-cutting of bedrock in both main and tributary valleys during the Illinoian glacial event. Regionally, these deposits consist of sand and pebble gravel, with minor silt, clay and

cobbles. Total thickness in this unit of up to 50 feet has been reported (Stanford, 1992).

The subsequent Millstone Terrace Deposits (altitude 40 to 50 feet above msl) surround the Upper Raritan Terrace. Stanford correlates the Millstone Terrace with the Middle to Late Pleistocene Sangamon glacial event. Deposits with lithology similar to the Raritan Terrace have been observed up to 30 feet thick, forming a terrace about 10 to 15 feet above the present floodplain of the Millstone River. Recent alluvial deposits, consisting of up to 20 feet of sand, silt and clay with minor organic material, surround deposits of the Millstone Terrace.

Bedrock beneath the site is the Passaic Formation, one of the sedimentary formations of the Newark Basin of New Jersey, which contains a thick sequence of Late Triassic and Early Jurassic non-marine sedimentary and igneous rocks. The predominant lithology is reddish-brown siltstone, mudstone, shale and occasional sandstone of fluvial origin, although grey to black lacustrine sequences of mappable scale have been observed in the Passaic Formation throughout the central Newark Basin. Faulting is relatively common, particularly in the western portions of the Passaic Formation outcrop. Rocks of the Passaic Formation typically contain three prominent fracture sets, one parallel to bedding planes and two sets of high angle fractures. Of the high angle fractures, a primary set is generally sub-parallel to strike, and a secondary set is perpendicular to strike.

### **2.1.2 Site Geology**

The deposits underlying the site were described as silt, which was then underlain by a sandy gravel that extended to bedrock (Weston, 1998).

The lithologies of the deposits have been characterized in detail during the Focused Feasibility Study (FFS). The lithologic descriptions suggested the following sequence (from ground surface to bedrock) of deposits to be typical at the site:

- Fill
- Sand and Gravel
- Silt and Clay
- Sand and Gravel (with some silt and clay layers and seams)
- Shales (bedrock)

The fill varies in composition across the site and predominantly contains a poorly sorted mixture of gravel, sand, silt and clay that varies in color from yellowish brown to brown to reddish brown. The unit also contains lesser

amounts of coal/ashes, asphalt, concrete, and brick fragments. The fill unit fluctuates in thickness across the site from a minimum of approximately two feet to a maximum of approximately five feet, but typically the thickness does not exceed four feet. Topsoil, which is part of this unit, is commonly found to be six to eight inches thick. The fill unit appears to be continuous underneath the Claremont Development.

Underlying the fill unit is a sand and gravel deposit. The deposit may generally be described as a fine to coarse sand with little to some fine to medium gravel and trace amounts of silt. The color is typically brown or reddish brown. The typical thickness reported for the unit range from three to six feet, and rarely does the thickness exceed seven feet. This sand and gravel unit appears to be continuous within the boundaries of the Claremont Development. Immediately south and southeast of the development in the Lost Valley residential area, this unit is not present, due to a decrease in topographic elevation.

A deposit of silt and clay underlies the sand and gravel unit. The unit is best described as a dark yellowish brown silt layer that is two feet thick with an underlying reddish-brown clay layer that is one foot thick. In many instances the silt layer is mottled or gleyed (additionally, the lower reaches of the overlying sand and gravel deposit are also sometimes gray). Within the boundaries of the Claremont Development, the thickness of the unit fluctuates from a minimum of four inches to a maximum of nine and one half feet. Additionally, both grain sizes (silt overlying clay) were not encountered at every boring location, however the deposit of silt and clay is believed to be relatively continuous beneath the development.

A second sand and gravel unit lies beneath the fine-grained unit. The unit is generally described as a reddish-brown fine to coarse sand with a trace to some fine to medium gravel, and trace amounts of silt; occasional seams and layers of well-sorted sand are encountered. Within the unit a discontinuous layer of silt and clay can be traced. Referenced to depth, the fine-grained layer occurs near the mid-section of the sand and gravel unit. Additionally, at the base of the unit a discontinuous layer (consisting of grain sizes from clay to cobbles) that is believed to be till has been identified. The thickness of the sand and gravel deposit (including the fine-grained layer and the basal till) fluctuates across the site from approximately 15 feet to 25 feet, with the typical thickness in the range of 19 to 23 feet. The basal till (which has been identified based on grain size, grain angularity and penetration rate increase) is approximately one foot thick and is likely not continuous.

The bedrock color is typically reddish brown and shows lithologies typical of the Passaic Formation, with alternating red-brown siltstone, sandstone and

shale. The rock was described as highly to moderately weathered, friable and soft. The bedrock surface varies in altitude beneath the development from approximately 12 to 17 feet above msl, with most of the altitudes near 15 feet below ground surface (bgs). No site-wide slope trends of the bedrock surface are apparent.

## **2.2 Hydrogeology**

### **2.2.1 Regional Hydrogeology**

The Passaic Formation has been extensively developed for groundwater supplies. Wells capable of yielding tens to hundreds of gallons per minute have been completed throughout much of the formation, generally at depths of 200 to 500 feet (Vecchioli, 1965). The rocks have little primary permeability. Virtually all groundwater movement occurs through the intersecting fracture sets. Rocks of the Passaic Formation typically contain three prominent fracture sets, one parallel to bedding planes and two sets of high angle fractures. Of the high angle fractures, a primary set is generally sub-parallel to strike, and a secondary set is perpendicular to strike. It has long been recognized that the Passaic (Brunswick) aquifer is strongly anisotropic, with the axis of maximum hydraulic conductivity generally parallel to bedding strike. Although the origin of the anisotropy is clearly related to the fractured nature of the aquifer, there has not been universal agreement over the immediate cause.

No uses of groundwater from the unconsolidated unit in the immediate vicinity of the site are known and, with the limited available drawdown, it is unlikely that a usable quantity of water could be obtained from the unit. Fluvial gravel deposits along the Raritan River have been used for water production, including potable water use. The Borough of Manville owns gravel wells near the Raritan River, which were formerly used for potable water.

### **2.2.2 Site Hydrogeology**

The site hydrogeology is described in detail in the Groundwater, Surface Water and Sediment Draft Remedial Investigation Report, September 2000. An unconfined (water table) aquifer with a saturated thickness of 10 to 14 feet was observed in the unconsolidated sediments at depths from about 14 to 21 feet below grade. Locally, isolated perched water zones have been identified at depths of 6 to 10 feet below grade. Beneath the site, the groundwater surface occurs in the deep sand and gravel unit. It appears likely that groundwater in the uppermost zone of the bedrock is in direct hydraulic connection with the saturated zone in the unconsolidated sediments.

## **2.3 Summary of Field Investigation Data**

CDM conducted a pre-design field investigation for OU 2 Phase 1 under Base Contract DACW41-99-D-9009 with the USACE. Prior to the beginning of field activities, CDM developed a sampling program, which was approved by USACE and EPA following implementation of NJDEP comments. The program detailed sampling and analysis rationale for the OU2 Phase 1 remediation. The purpose of the sampling program was to delineate the contamination in accordance with NJDEP post-excavation sampling requirements to the extent possible.

Whenever possible, the sample locations and depths were configured so that the samples could serve as post-excavation data if the results were less than the ACGs. As such, the samples were collected in locations so that NJDEP requirements for post-excavation sampling criteria were met. The criteria required the collection of a sidewall sample at a frequency of one per 30 feet, and a bottom sample at a minimum frequency of one sample per 900 ft<sup>2</sup>. The rationale behind collecting these samples prior to excavation was that, once the clean limits of excavation were determined, the Contractor would excavate to those limits and backfill immediately, which would improve the scheduled duration of work at each residence. The Contractor would collect and analyze post-excavation soil samples to supplement the data collected during the pre-design investigation, in cases where the number and location of pre-design samples were insufficient to characterize the excavations in accordance with NJDEP requirements.

### **2.3.1 Surface Soil Samples**

A total of 43 surface (0 - 0.5 foot) samples were collected to supplement the surface soil sampling from previous investigation phases. The samples were analyzed for semi-volatiles by EPA method 8270. In addition, samples collected at 207 East Camplain Road were also analyzed for lead by EPA method 6010 due to a sample exceedance for lead noted during the RI. Soil sample analytical results are summarized in Appendix A of the OU2 Phase 1 specifications (CDM, November 2001).

### **2.3.2 Shallow Soil Borings**

Shallow borings were advanced into the subsurface by either direct push or hollow-stem auger drill rig, depending upon the conditions in the area intended for drilling. Boring logs are included in Appendix A of OU2 Phase 1 Design Analysis Report (DAR), (CDM, November 2001).

A total of 54 shallow soil borings were advanced during the pre-design investigation at the OU 2 Phase 1 properties to supplement the borings from previous investigation phases. Split-spoon or direct push samples were

collected continuously at 2-foot interval and the lithology was recorded. Selected soil samples were sent to USACE-approved laboratory for semi-volatiles analysis by EPA method 8270. The depth of the borings and the sample selection were determined based on data from previous investigations. Each borehole was grouted with a cement-bentonite mixture after removing the drilling tools from the subsurface. The locations were restored to pre-existing conditions. The locations of the pre-design borings were surveyed and are shown on the excavation plans included in the design drawings.

### **2.3.3 Geophysical Survey**

Prior to initiating the drilling program, a geophysical utility location and feature survey was conducted within a ten foot radius of each proposed soil boring location by NAEVA Geophysics, Inc. (NAEVA) of Tappan, New York, under subcontract to CDM. NAEVA used a comprehensive suite of geophysical tools to identify and locate the presence of underground utilities or buried objects. At each location, the following geophysical tools were used:

- Fisher TW-6 Pipe and Cable Locator to identify detectable buried electrically conductive conduits or piping that may have no surface expression;
- Radiodetection RD600 Utility Locator to locate the surface trace of a variety of buried utilities;
- Metrotech 50/60 Power Line Locator to detect conduits that carry 60-cycle current;
- 3M Dynatel 2250 Cable Locator to detect the surface trace of telephone and other narrow gauge wiring; and
- Sensors and Software NOGGIN 250 Ground Penetrating Radar (GPR) system with a 250 MHz antennae.

The survey was used to identify buried utilities and objects so that they were not struck or punctured with the drilling tools. The results of the surveys were marked on individual property maps. CDM performed field oversight and health and safety monitoring during all geophysical survey field activities.

### **2.3.4 Topographic Survey**

Site topographic base map was prepared by GEOD Corporation (REAC and RI/FS borings). Zambrana Engineering Inc. utilized the base map and its own field survey to prepare new mapping of the OU2 Phase 1 properties. The

locations of the pre-design borings, which are shown on the contract drawings were surveyed and added to the map. Both firms were licensed New Jersey land surveyors.

## 2.4 Design Criteria

The ROD for OU2 Phase 1 specified excavation and transportation for off-site disposal of soils containing PAHs in excess of the ACGs from the Claremont Development to maximum depth of 14 feet bgs. The ROD also specified that if encountered, isolated creosote waste would be removed and disposed of in accordance with the OU1 ROD, which specified removal and shipment of creosote waste to a transfer storage and disposal facility (TSDF) for treatment prior to final disposal. Table 2-1 contains the site-specific ACGs, which were used as the basis for the design and remediation.

Table 2-1 Analytical Cleanup Goals

Chemical Parameter	Action Level (ppm)
Benzo(a)Pyrene	0.66
Benzo(a)anthracene	0.9
Chrysene	90
Benzo(b)fluoranthene	0.9
Benzo(k)fluoreanthene	9
Indeno(1,2,3-cd)pyrene	0.9
Dibenzo(a,h)anthracene	0.66

## 2.5 Remedial Design Documents

Based upon the investigation data and established design criteria, CDM developed the design documents, including DAR, drawings, specifications, and cost estimate. The design documents were performance-based, that is, minimum excavation horizontal limits and depths were presented on the design drawings, with the exception of the excavation support system, which was designed by CDM and submitted to CSX Railroad to gain early approval. Excavation limits accounted for removal of soil containing PAHs levels exceeding the ACGs.

Several factors such as adjacent structures and properties, proximity to railroads etc. were considered to determine the horizontal limits of the excavations. Generally, excavation depths ranged from one foot to 14 feet bgs.

### 2.5.1 Site Specific Plans

For the most part, work plans developed for the Lagoon B (OU1 Phase 1) remediation were utilized in addressing all major project elements. Several

work plans were amended to reflect OU 2 Phase 1 property-specific conditions and to ensure compliance with the project design documents. USACE reviewed and approved all plans addenda prior to implementation. The following plans were amended and/or submitted for approval:

- Excavation and Handling Plan (Addendum)
- Water Relocation Plan
- Soil Erosion and Sediment Control Plan (Addendum)
- Ambient Air Monitoring Plan (Addendum)



Section 3

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## **Section 3**

### **Remedial Construction Activities**

OU 2 Phase 1 remedial construction activities started in February, 2002 and were completed in June, 2002. This phase of the project was performed concurrent with the Lagoon B phase in order to minimize impacts to the residents surrounding Lagoon B. A summary of the major construction activities completed at the Federal Creosote site during the OU2 Phase 1 remediation is presented below.

#### **3.1 Site Preparation**

Site preparation activities including site survey, temporary facilities mobilization, resident relocation, erosion and sediment control, site security, etc. were performed prior to commencement of remedial construction. Site preparation activities are described in the following paragraphs.

##### **3.1.1 Site Survey**

OU2 Phase 1 properties were surveyed during the pre-design investigation as described in Section 2.3.4. Pre-remedial conditions of the properties are shown on the contract drawings. AutoCAD files of the property surveys were provided to SES prior to construction.

##### **3.1.2 Temporary Facilities**

Since the project was on-going, temporary support facilities mobilized to the site for the Lagoon B remediation were utilized during the OU2 Phase 1 construction activities. Temporary facilities were located within the Contractor support zone, in the north portion of the Rustic Mall, as shown on the contract drawings. The support facilities included six 12 feet by 15 feet trailers. One trailer was used by the EPA, another was designated to USACE, and a third trailer was used by security guard. The remaining three trailers were used by SES. Temporary water, sanitary, electric and telephone services were established. The support zone was completely secured with an 8 feet high chain link fence.

The decontamination pad constructed within the Contamination Reduction Zone (CRZ) of Lagoon B was used for equipment decontamination during the OU2 Phase 1 remediation. The pad was integrated with the truck tarping station and was constructed using 6-mil polyethylene liner, berm containment, and water collection sump. The sump was equipped with an electric pump. Collected wastewater was treated at the on-site wastewater treatment plant prior to being discharged into the storm sewer system. Individual CRZs were

established at each remote excavation location for personnel decontamination, which consisted of removal of personal protective equipment (PPE).

A temporary access road was constructed adjacent to the deep excavation area on 222 - 240 East Camplain Road to facilitate sheet pile installation and truck loading. The road was constructed by placing a 6-ounce non-woven geotextile on the existing surface and topping with a layer of 6 to 12 inches thick clean stone.

### **3.1.3 Resident Temporary Relocation**

Depending on the extent of the remediation at the properties, it was necessary to temporarily relocate some residents while remediation was on-going. EPA's criteria for resident temporary relocation were as follows:

- Safety hazard for the homeowners
- Prolonged period of inaccessibility to the house
- Shutoff of utilities for a prolonged period

Based on the established criteria, residents of the following properties were temporarily relocated:

- 166 East Camplain Road
- 195 East Camplain Road
- 201 East Camplain Road
- 222 East Camplain Road

EPA temporarily relocated these residents to nearby communities for the duration of the construction.

### **3.1.4 Soil Erosion and Sediment Control**

SES developed a Soil Erosion and Sediment Control Plan for the Lagoon B remedial activities. To address site-specific changes for the OU2 Phase 1 remediation, SES submitted an addendum of the original plan to Somerset County Soil Conservation District (SCSCD) for recertification. A copy of the Addendum including SCSCD approval letter is presented in Appendix A. To control offsite siltation/erosion that may result during precipitation events, the perimeter of excavation areas and the stockpiles were encompassed with silt fence. Storm water inlets were covered with filter fabric to prevent siltation of the system. Finally, the stabilized construction entrance, constructed during the Lagoon B remediation was maintained during the course of the OU2 Phase 1 construction.

### **3.1.5 Site Security**

Site security was provided by Initial Security of Newark, New Jersey under subcontracting agreement with SES. Security guard was stationed in an office

trailer located within the support zone. Security guard was on site 16 hours on weekdays and 24 hours on weekends and holidays. During the course of the construction, SES personnel provided site security during regular working hours. All visitors were required to sign-in upon entering the support zone.

### 3.2 Site Clearing

Trees, bushes, and ornamental plants, fences, etc. located within the excavation areas were removed prior to the beginning of the excavation activities. Waste generated during site clearing was disposed of at a municipal waste disposal facility as specified in the project documents.

Photo 3-1 - Site Clearing



### 3.3 Excavation

The primary objective of the project was the removal and disposal of contaminated soil that may pose risks to human health and the groundwater. Excavation activities were initiated on February 28, 2002 and were completed on May 1, 2002.

SES excavated to the limits shown on the contract drawings. Contract drawings presented three types of excavations depending on the degree to which the contamination was delineated during the pre-design investigation in compliance with NJDEP post-excavation sampling criteria. Upon completion of excavations, SES inspected both the sidewall and the bottom of the excavated areas for visible sign of contamination. If contamination was suspected, the Contracting Officer was notified and SES proceeded as directed. A total of 8,957 tons of soil was excavated and transported off site for disposal.

As discussed in Section 2.3, contaminated areas were generally well defined by implementing the sampling and analysis program developed during the pre-

design investigation phase of the project. Based upon the results of the data collected during the investigation, excavation areas were classified as follows:

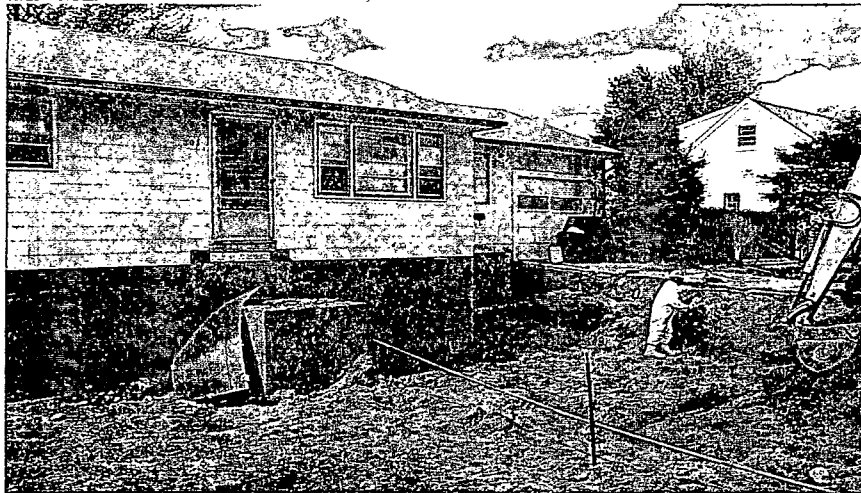
- Type I Excavations - Type I Excavations were completely delineated in accordance with NJDEP post-excavation sampling criteria during the pre-design investigation. Type I excavation areas were allowed to be backfilled immediately since post excavation sampling was not required. The depth of these excavations was typically 1 to 2 feet. A unique shading pattern was assigned to these areas as shown on the contract drawings.
- Type II excavations - Type II excavations were identified as excavation areas for which only sidewall post excavation sampling was required. Adequate samples were collected during the pre-design investigation to delineate the bottom of these excavations in accordance with NJDEP confirmation sampling criteria. Locations of post excavation sidewall samples were determined during the design process and are shown on the contract drawings.
- Type III excavations - Type III excavations were areas that required both bottom and sidewall post excavation sampling. Locations of bottom and sidewall post excavation samples were determined during the design process and were shown on the contract drawings.

SES utilized PC-400/Cat-345, Komatsu PC-300, and PC-200 excavators to excavate the contaminated materials. Materials excavated from shallow excavation areas were placed in regular dump trucks and transported to the established stockpile area located within Lagoon B. Materials from the deep excavation areas at 222-240 East Camplain Road were loaded into all terrain dump trucks and transported to the stockpile area in Lagoon B. Crane mats were also utilized in the deep excavation areas to facilitate the transportation of the materials.

Excavated materials were segregated into three distinct stockpiles corresponding to the types of disposal as summarized in Table 3-1. To avoid cross contamination from one stockpile to another, SES designated an excavator for each stockpile. Stockpiled materials were loaded into lined trucks for transportation to treatment or disposal facilities.

Dewatering system was not necessary during the OU2 Phase 1 remediation since the excavations were relatively shallow. Perched water encountered during the excavation as well as surface runoff that accumulated within the excavation areas was pumped to the on-site wastewater treatment plant for treatment prior to discharge.

Photo 3-2 - Excavation adjacent to house



### 3.4 Odor Control

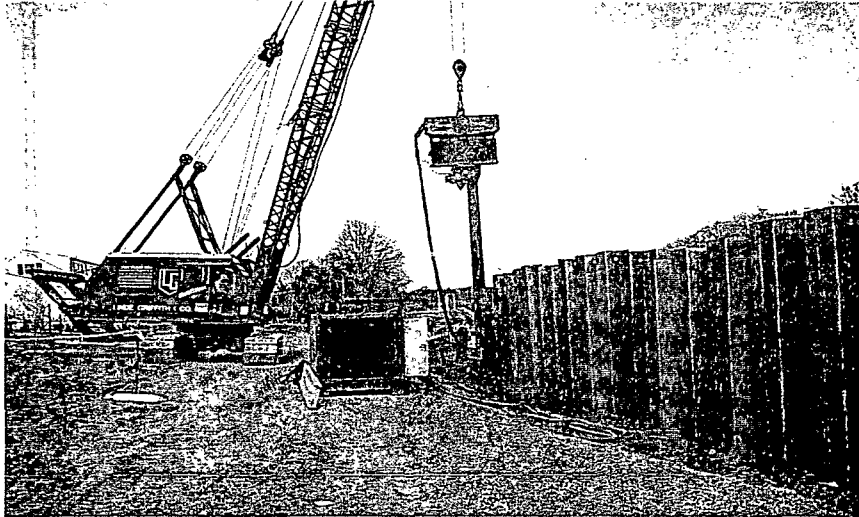
OU2 Phase 1 excavations were in general relatively shallow. As a result, odor control was not a primary concern. Ground treatment methods that were determined to be effective during the Lagoon B remediation were utilized to control odor. This method consisted of applying odor suppressant foam product directly over excavation areas and stockpiles. Details of the Lagoon B odor control evaluation can be found in the Federal Creosote Site Odor Control Evaluation report prepared by UAI Environmental, Inc. in January 2001.

### 3.5 Excavation Support System

Depending on the depth of the excavation, sheeting or sloping was utilized to provide excavation support to structures such as houses and garages, CSX right of way, and along East Camplain Road. Under subcontract agreement with CDM, Engineering Technologies (ET) designed all excavation support systems. Design of the support along the CSX right of way was submitted to CSX for approval prior to installation. All sheeting was installed by Linde-Griffith Construction Co., of Newark, NJ, using an ICE 4500 vibratory hammer rigged to a Manitowoc 3000W 65-ton crane. Subsequent to backfilling, all sheeting was removed, except for approximately 45 lf in front of 166 East Camplain Road in the northwest corner of the property, which was left in place and cut off 4 feet bgs to provide support for excavation of the adjoining road associated with future work on OU1 Phase 3, Canal B.

A 1:1 slope system was established for excavations deeper than four feet. When excavation was directly adjacent to structures' foundations, a 1-foot horizontal bench was established at the top of the slope. The bench was established in order to prevent the disturbance of the footing's stress influence zone.

Photo 3-3 - Sheet pile installation



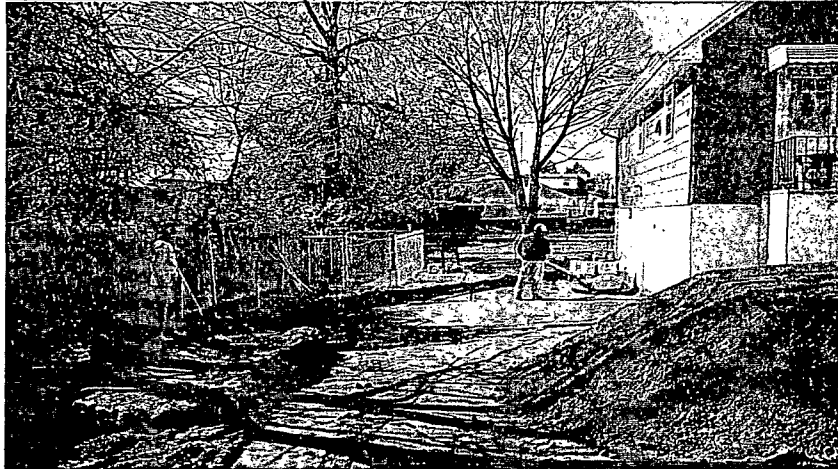
### 3.6 Backfilling

SES backfilled the excavated areas using clean imported backfill material from Jamesburg, New Jersey. Toto Brothers was the distributing agent. Prior to being brought to the site, physical and chemical analyses were performed on every 5,000 CY lot of material to ensure that backfill materials met the project requirements and specifications. All backfill material placed at the site met NJDEP residential direct contact cleanup criteria.

Backfill material was placed directly in the excavation and spread in horizontal layers up to 8 inches thick utilizing bulldozers. Placed material was compacted by utilizing an SD-40D roller to a minimum of 95% of its maximum dry density by Standard Proctor (ASTM D-698). Hand compactors and/or vibratory plates were utilized to compact areas immediately adjacent to houses or other structures. Compaction and moisture content testing of the backfill material was performed by SOR Testing Laboratories, Inc. located in Cedar Grove, New Jersey.

The upper layer of backfill material consisted of 6 inches of topsoil except in areas below sidewalk, walkway, driveway, etc. SES received the topsoil from EME Incorporated. The source of the material was a pit located in Plumstead Township, New Egypt, New Jersey.

Photo 3-4 - Backfilling Operations



### 3.7 Waste Disposal

The majority of OU2 Phase 1 excavated soils were disposed of at a Subtitle C landfill. However, with USACE approval, source material encountered during the excavation activities were transported off site for thermal treatment prior to final disposal. Treatment and disposal of source material was performed as specified in the project documents. Excavated material was loaded into dump trucks and transported to stockpiles in Lagoon B and subsequently transported off site for disposal. Table 3-1 summarizes the quantities of material disposed of during the OU2 Phase 1 remediation.

Excavated materials were segregated into three stockpiles in accordance with the different waste types summarized in Table 3-1. Materials to be disposed of at Subtitle C and D facilities were transported to their respective facilities by utilizing 70,000-lb triaxle dump trucks. Materials requiring treatment were loaded into 80,000-lb dump trailers for transportation to the thermal treatment facility. Trucks transporting excavated materials to the facilities were required to be lined.



Photo 3-5 - Loading of excavated soil



Table 3-1 Material Disposal Summary

Facility	Address	Permit No.	Facility Type	Quantity (Tons)
Bennett Environmental Inc.	80 Rue Dez Melezes St Ambrose, Quebec, Canada G7P2N4	7610-02-01- 0603816	Thermal Treatment and Disposal	38
CWM Chemical	1550 Balmer Road Model City, NY 14107	NYD 049836679	Subtitle C	8,534
Waste Management GROWS	1513 Bordentown Road Morrisville, PA 19067	PAD 000429589	Subtitle D	340
Waste Management Tullytown Resource Recovery Facility (TRRF)	200 Bordentown Road Tullytown, PA 19007	DEP 17273	Subtitle D	45

### 3.7.1 Wastewater

Perched water and surface runoff discussed in Section 3.3 and wastewater generated from equipment and personnel decontamination was treated at the on-site wastewater treatment plant constructed during the Lagoon B remediation prior to being discharged to the storm sewer system, and ultimately to the Millstone River.

Because the treated water was ultimately discharged to the Millstone River, compliance with the New Jersey Pollutant Discharge Elimination System (NJPDDES) Master General Petroleum Products Cleanup (GPPC) was required. Surface Water Master General Permit (No. NJ0102709) and Discharge Authorization Permit (No. NJG0139050) obtained during the Lagoon B remediation were renewed. Copies of the renewed permits are included in

Appendix B. Table 3-2 below summarizes the wastewater treatment plant effluent permit discharge limits. Table 3-3 is a summary of the wastewater treatment plant sampling requirements.

During the Lagoon B remediation, SES designed and constructed a 300 GPM WWTP to treat wastewater generated during the remedial activities. The plant remained on-site for the duration of the OU2 Phase 1 remediation. The system consisted of an oil-water separator, followed by an influent equalization tank, followed by bag filters, granular activated carbon, and effluent storage tanks. The plant was operated and maintained in accordance with the Federal Creosote Superfund Site Wastewater Treatment Plant Operations and Maintenance Manual (SES, April 2001). Plant design rationale is also included in the manual. SES obtained a permit in EPA's name (Permit No. 01-0568) from NJDEP to construct and operate the plant. A copy of the permit is included in Appendix C. The total volume of water treated and discharged during the OU2 Phase 1 remedial activities is included in the Lagoon B volume.

**Table 3-2 Wastewater Treatment Plant Effluent Permit Requirements**

Parameter	Effluent Discharge Limits	
	Monthly Average	Daily Maximum
TSS	Report ppm	40 ppm
TPH	10 ppm	15 ppm
TOC	Report ppm	20 ppm
Total Cr	50 ppb	100 ppb
Total Cu	50 ppb	100 ppb
Total Ni	72 ppb	144 ppb
Total Pb	37 ppb	79 ppb
Fluoranthene	25 ppb	68 ppb
Fluorene	22 ppb	59 ppb
Phenanthrene	22 ppb	59 ppb
Pyrene	25 ppb	67 ppb
Benzo(a)anthracene	Report ppb	10 ppb
Naphthalene	22 ppb	59 ppb
Benzene	Report ppb	7 ppb
Tetrachloroethylene	Report ppb	16 ppb
TBA	Report ppb	Report ppb
2,4- Dimethylphenol	18 ppb	36 ppb
Phenol	Report ppb	26 ppb
MTBE (influent)	Report ppb	Report ppb
MTBE (effluent)	Report ppb	70 ppb
MTBE % Removal	>85%	NA
Effluent Flow	Report GPD	Report GPD
Parameter	Minimum	Maximum
pH	6.0 s.u.	9.0 s.u.

Table 3-3 Wastewater Treatment Plant Sampling Requirements

Parameter	Function	Frequency	Analytical Method	Container	Preservatives
Flow	O&M	Every other hour	SES SOP	NA	NA
pH	O&M	Per shift	EPA 150.1	8 OZ Jar	Analyze immediately
pH	Permit	Twice a week	EPA 150.1	125 ml HDPE	Cool 4 °C
TSS	Permit	Twice a week	EPA 160.2	500 ml HDPE	Cool 4 °C
TPH	Permit	Twice a week	QA-025	1 liter Amber	pH<2 HCl Cool 4 °C
TPH	O&M	Twice a week	Hach 10052	100 ml Poly	Analyze immediately
TOC	Permit	Twice a week	EPA 415.1	60 ml HDPE	pH<2 HCl Cool 4 °C
Total Cr	Permit	Twice a week	EPA 200.7	500 ml HDPE	pH<2 HNO <sub>3</sub>
Total Cr	O&M	Twice a week	Hach 8024	100 ml Poly	Analyze immediately
Total Cu	Permit	Twice a week	EPA 200.7	500 ml HDPE	pH<2 HNO <sub>3</sub>
Total Cu	O&M	Twice a week	Hach 8143	100 ml Poly	Analyze immediately
Total Ni	Permit	Twice a week	EPA 200.7	500 ml HDPE	pH<2 HNO <sub>3</sub>
Total Ni	O&M	Twice a week	Hach 8150	100 ml Poly	Analyze immediately
Total Pb	Permit	Twice a week	EPA 200.7	500 ml HDPE	pH<2 HNO <sub>3</sub>
Total Pb	O&M	Twice a week	Hach 8317	100 ml Poly	Analyze immediately
SVOC	Permit	Twice a week	EPA 625	1 liter Glass	Cool 4 °C
MTBE (influent)	Permit	Twice a week	EPA 624	40 ml Glass	HCl
MTBE (effluent)	Permit	Twice a week	EPA 624	40 ml Glass	HCl
Benzene	Permit	Twice a week	EPA 624	40 ml Glass	HCl
TCE	Permit	Twice a week	EPA 624	40 ml Glass	HCl
TBA	Permit	Twice a week	EPA 624	40 ml Glass	HCl
2,4-Dimethylphenol	Permit	Twice a week	EPA 625	1 liter Glass	Cool 4 °C
Phenol	Permit	Twice a week	EPA 420.1	1 liter	pH<2 H <sub>2</sub> SO <sub>4</sub> Cool 4 °C
Phenol	O&M	Twice a week	Hach 8047	100 ml Poly	Analyze immediately

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### 3.8 Site Restoration

Property features impacted by construction activities were restored and/or replaced in kind by the contractor. Roadways, curbs, sidewalks, etc. impacted by the remedial activities were also restored and/or rebuilt as shown on the restoration plans included in the contract drawings. Grass areas were restored with sod. Excavated areas were graded to closely follow the pre-excavation grades. Landscape items trees, shrubs, etc. removed during remedial activities were replaced as shown on the contract drawings. Utility service laterals impacted by the excavation were also restored. Utility work was performed by the respective utility companies or their authorized representatives, except for water, sanitary, and storm sewer work, which was performed by SES.

Photo 3-6 - Sidewalk and Driveway Restoration

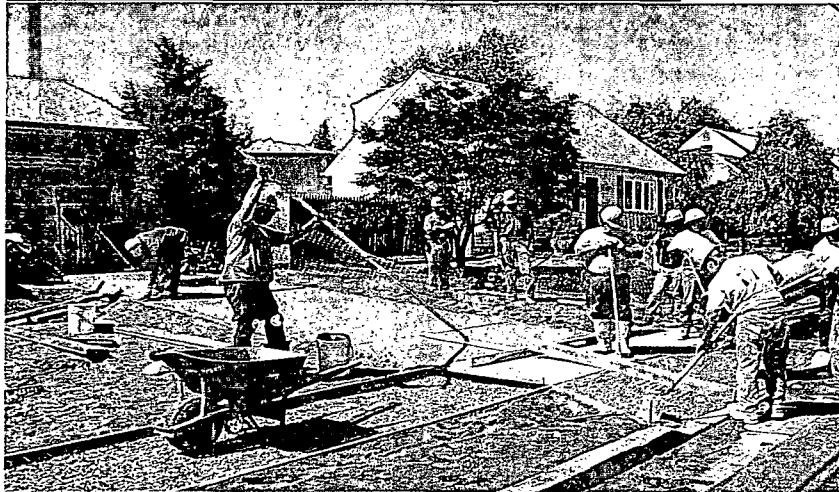
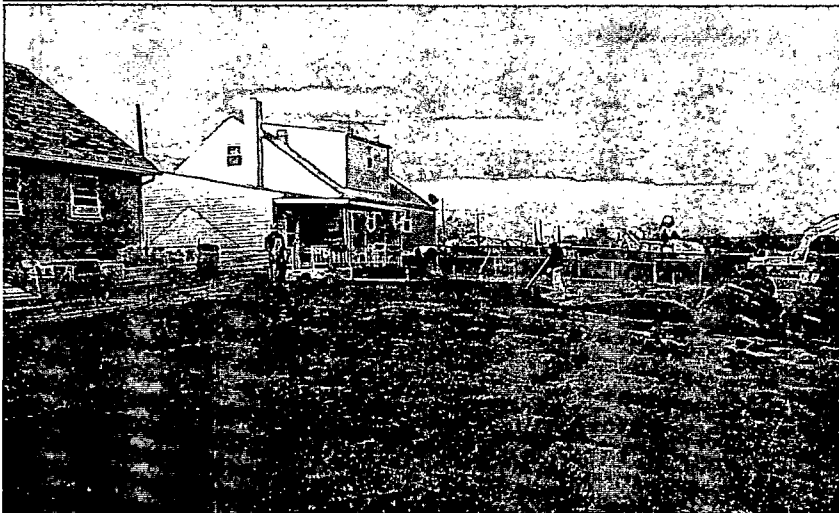


Photo 3-7 - Sod Installation



### **3.9 As-Built Survey**

Final as-built survey depicts the post-remediation conditions and final topography of each remediated property. The location and elevation of the steel sheeting left in place were also shown. Excavation as-built survey was also performed and excavation cross sections were prepared. Copies of as-built drawings are included in Appendix D. Final survey was performed by Kennon Surveying Services, Inc. of Warren, New Jersey, a New Jersey licensed land surveyor.

### **3.10 Soil Sampling and Analysis**

Soil sampling and analysis was performed as described in the USACE-approved Sampling and Analysis Plan (SAP). Samples were analyzed for the primary site contaminants, PAHs, by SW-846 method 8270C.

#### **3.10.1 Post Excavation Sampling**

Upon completion of excavation up to the limits shown on the contract drawings, post excavation sampling was performed in accordance with the site specific SAP.

Post excavation samples were collected in locations shown on the excavation plans included in the contract drawings. The locations were established in compliance with NJDEP post excavation sampling criteria. For primary excavations, post excavation samples were collected at a rate of one sample for every 900 ft<sup>2</sup> of bottom area and one sidewall sample for every 30 linear feet of sidewall excavation. A total of 105 post excavation samples were collected and analyzed for PAHs.

Post excavation samples were collected in areas where excavation depth was less than or equal to 14 feet, and the laboratory results were compared to the ACGs. If results showed that contamination remained, secondary excavation, which was defined as excavation beyond the excavation limits shown of the contract drawings, was conducted in 2-foot increments (horizontal and vertical) up to a maximum depth of 14 ft or as directed by the Contracting Officer. Post excavation sampling requirements for secondary excavations were as follows:

- One sample from the excavation bottom for every 900 ft<sup>2</sup>
- For every 4 vertical feet of secondary excavation, one sample for every 30 linear feet of sidewall excavation

- Property closure reports are included in Appendix E. These reports contain individual property drawings which show the locations of the post excavation samples.

### **3.10.2 Backfill Material Sampling**

Excavated areas were backfilled with clean soil from off-site sources. Representative samples of backfill materials were collected and analyzed at a frequency of one sample for every 5,000 CY of imported material. Only material that met NJDEP residential direct contact soil cleanup criteria (NJAC 7:26D) and the project specifications was utilized.

### **3.11 Ambient Air Monitoring**

SES amended the approved Lagoon B Ambient Air Monitoring Plan (AAMP) describing the methods and procedures utilized to determine the air contaminants that may be released during remediation activities. The contaminants of concern included; Volatile Organic Compounds (VOCs), PAHs, and respirable particulates. In addition, a meteorological system, monitoring wind speed and direction, ambient temperature, atmospheric pressure, solar radiation, and precipitation was installed within the support zone.

Ambient air monitoring was performed by using real time instrumentation and samples were collected for analysis in accordance with EPA T0-13, T0-14, and PM-10 methods for PAHs, VOCs, and respirable particulates, respectively. Tables 3-4 and 3-5 summarize the perimeter air monitoring/sampling requirements for the OU2 Phase 1 remediation. Analytical results of the collected samples showed concentrations below the allowable limits.

Table 3-4 Respirable Dust Monitoring Requirements

Parameters	Action Level <sup>1</sup>	Frequency <sup>2,3</sup> per location	Analytical Method	Action Required
Site Perimeter - Upwind (Background)				
Respirable Dust (PM <sub>10</sub> )		1 per 2-hour period	Direct Reading	
Dust Sample (Respirable Particulate)		3 day background evaluation 1 per day - 1 <sup>st</sup> week 1 per week - 1 month 1 per month thereafter 1 per day - changed conditions	PM-10	
Site Perimeter - Downwind (3 Locations)				
Respirable Dust (PM <sub>10</sub> )	100 ug/m <sup>3</sup> <sup>1,4</sup>	One 15-minute reading per hour	Direct Reading	Repeat reading - if 2 <sup>nd</sup> 15-minute average value exceeds, notify CO, document exceedance, evaluate engineering controls.
	150 ug/m <sup>3</sup> <sup>1,4</sup>	One 15-minute reading per hour		Stop work, notify CO, determine corrective action for dust control, start work after CO acceptance.
Dust Sample (Respirable Particulate)	150 ug/m <sup>3</sup>	3 day background evaluation 1 per day - 1 <sup>st</sup> week 1 per week - 1 month 1 per month thereafter 1 per day - changed conditions	PM-10	If sample exceeds, evaluate engineering controls and stop work. Implement engineering controls, start work after CO acceptance.
<sup>1</sup> Ambient concentrations including background. <sup>2</sup> Frequencies listed in the table are for active construction periods. <sup>3</sup> Monitoring during non-work hours (weekends) is stated in the PAMP. <sup>4</sup> Contractor required to maintain records to document compliance with CAA and NJ Administrative Code.				

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Table 3-5 VOCs and PAHs Air Monitoring Requirements

Parameters	Action Level <sup>1</sup> Ppb	Frequency <sup>2,3</sup> per location	Analytical Method	Action Required
Site Perimeter - Upwind (Background)				
Total Volatile Organics		Full work shift (8-10 hours)	Direct Reading	
Air Sample Volatile Organic Compounds PAHs		3 day background evaluation 1 per day - 1 <sup>st</sup> week 1 per week - 1 month 1 per month thereafter 1 per day - changed conditions	EPA T0-13 (PAHs) EPA T0-14 (VOCs)	
Site Perimeter - Downwind (3 Locations)				
Total Volatile Organics	10,000	Instantaneous	Direct Reading	Stop work, notify CO, determine corrective action for vapor control, start work after CO acceptance.
	2,000	15-minute	Direct Reading	Stop work, notify CO, determine corrective action for vapor control, start work after CO acceptance.
	300	8-hours corresponding to peak site operations	Direct Reading	Evaluate and implement corrective action prior to the start of the next shift. Notify CO, start work after CO acceptance.
Air Sample Volatile Organic Compound Naphthalene / Aromatics	OEL <sup>4</sup> /100 for each detected target analyte	3 day background evaluation 1 per day - 1 <sup>st</sup> week 1 per week - 1 month 1 per month thereafter 1 per day - changed conditions	T0-13 (PAHs) T0-14 (VOCs)	
<sup>1</sup> Ambient concentrations including background. <sup>2</sup> Frequencies listed in the table are for active construction periods. <sup>3</sup> Monitoring during non-work hours (weekends) is stated in PAMP. Objective for control of vapor during non-work hours is to maintain concentrations at or near background levels. <sup>4</sup> Occupational Exposure Limit (OEL) - Time Weighted Average.				

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## Section 4

### Chronology of Events

Figure 4-1 summarizes the events that occurred during the OU2 Phase 1 Remedial Action.

ID	Task Name	Duration	Start	Finish	Feb '02	Mar '02	Apr '02	May '02	Jun '02	Jul '02	Aug '02	Sep '02	Oct '02	Nov '02	Dec '02
1	Site placed on National Priority List	1 day	Tue 1/19/99	Tue 1/19/99											
2	EPA signed OU2 Record of Decision	1 day	Fri 9/29/00	Fri 9/29/00											
3	CDM Submitted Draft Design Documents	1 day	Tue 10/2/01	Tue 10/2/01											
4	CDM Submitted Final Design Documents	1 day	Wed 11/21/01	Wed 11/21/01											
5	CDM Submitted Final Cost Estimate	1 day	Mon 12/3/01	Mon 12/3/01											
6	Pre-Construction and Pre-Work Conference	1 day	Thu 2/7/02	Thu 2/7/02											
7	Notice To Proceed	1 day	Tue 2/19/02	Tue 2/19/02											
8	Work Plans	71 days	Fri 2/22/02	Mon 6/3/02											
9	Site Layout Surveying	71 days	Fri 2/22/02	Mon 6/3/02											
10	Soil Erosion and Sediment Control	71 days	Fri 2/22/02	Mon 6/3/02											
11	Excavation Activities	45 days	Thu 2/28/02	Wed 5/1/02											
12	158-166 East Camplain Road	33 days	Thu 2/28/02	Mon 4/15/02											
13	189-207 East Camplain Road	11 days	Wed 4/17/02	Wed 5/1/02											
14	222-240 East Camplain Road	29 days	Mon 3/11/02	Thu 4/18/02											
15	104 Louise Drive	7 days	Tue 3/5/02	Wed 3/13/02											
16	255 East Camplain Road	1 day	Fri 3/1/02	Fri 3/1/02											
17	22 Florence Court	6 days	Fri 3/15/02	Fri 3/22/02											
18	Site Restoration	66 days	Fri 3/1/02	Mon 6/3/02											
19	158-166 East Camplain Road	64 days	Fri 3/1/02	Thu 5/30/02											
20	189-207 East Camplain Road	28 days	Thu 4/18/02	Tue 5/28/02											
21	222-240 East Camplain Road	49 days	Tue 3/26/02	Mon 6/3/02											
22	104 Louise Drive	5 days	Wed 3/13/02	Tue 3/19/02											
23	255 East Camplain Road	2 days	Wed 3/6/02	Thu 3/7/02											
24	22 Florence Court	14 days	Tue 3/19/02	Fri 4/5/02											
25	Sheetpile Extraction and Decontamination	9 days	Fri 4/26/02	Wed 5/8/02											
26	Pre-Final Inspection	1 day	Tue 8/6/02	Tue 8/6/02											
27	Final Inspection	1 day	Wed 12/18/02	Wed 12/18/02											
28	NJDEP Acceptance	1 day	Thu 7/3/03	Thu 7/3/03											

Project: OU2 Phase 1

Date: Fri 7/22/05

Task

Milestone

Summary

Page 1



## **Section 5**

# **Performance Standards and Construction Quality Control**

SES implemented a Quality Control (QC) program that incorporated the requirements of the project specifications and the approved site specific Contractor Quality Control Plan (CQCP). USACE provided Quality Assurance (QA) through the use of on site personnel to monitor project performance.

### **5.1 Project QA/QC Organization**

OU2 Phase 1 remedial action was supported by both field and office personnel. SES on site personnel consisted of Project Manager, Site Contractor Quality Control Manager, Site Safety and Health Officer, Project Engineer, and Project Superintendent. Overall project organizational chart is presented in Figure 5-1.

### **5.2 Construction QA/QC Implementation**

A three-phase quality check was conducted for each definable feature of the work. The checks include preparatory, initial, and follow-up inspections. The preparatory inspection was performed after all required plans, documents, and materials were approved and copies were at the work site. The initial inspection was conducted after the completion of a representative sample of the work. The follow-up inspection consisted of daily quality control activities to ensure compliance with contract requirements until the completion of a particular definable feature of work.

### **5.3 Sampling and Analysis**

A QA/QC system was implemented to ensure the accuracy, completeness, and precision of sampling data. Collected field QA/QC samples included field duplicates, matrix spike, matrix spike duplicates, and QA split samples.

#### **5.3.1 Field Duplicates**

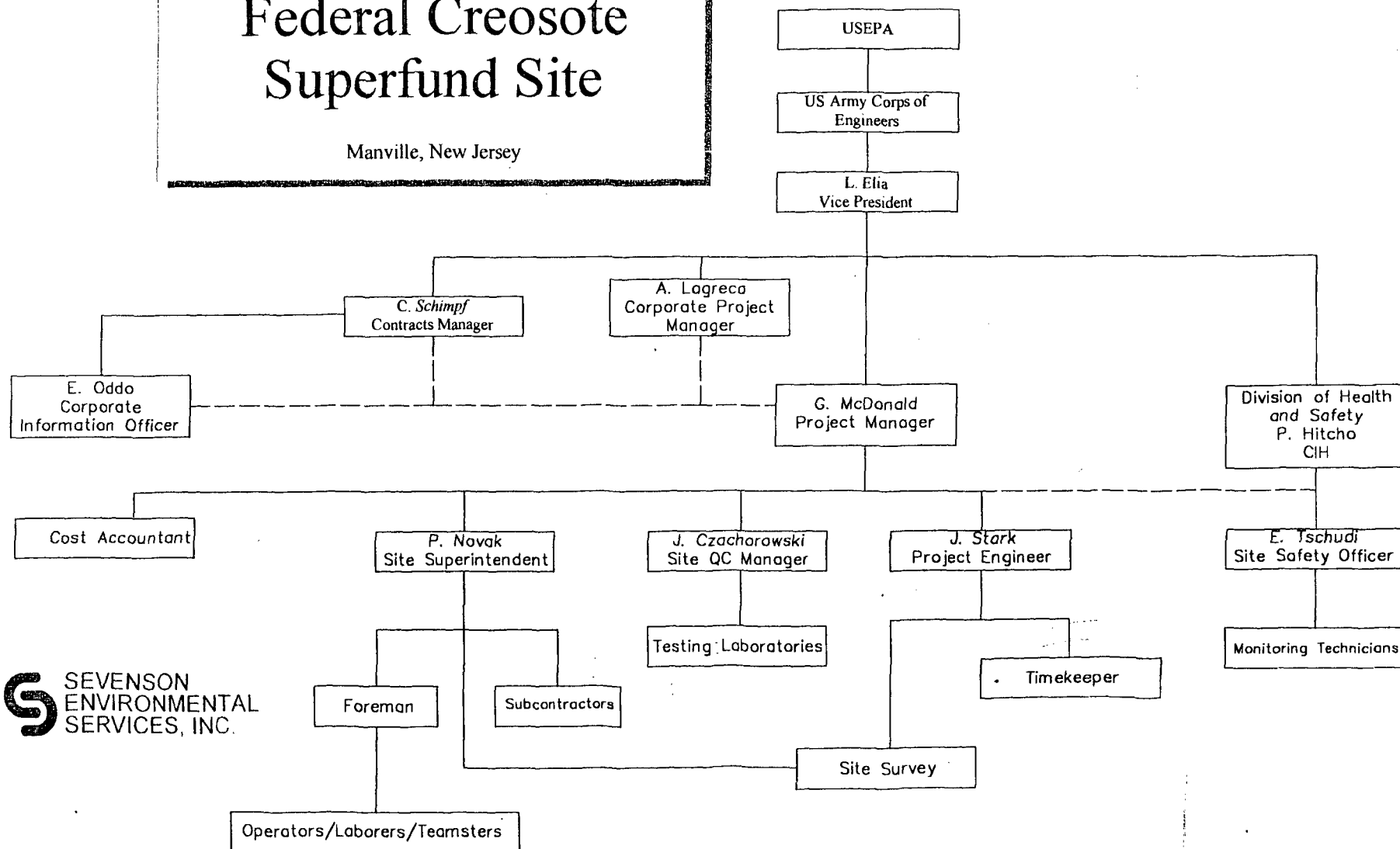
Field duplicates are defined as a homogenized sample collected from a unique location that was divided into two separate sets of containers and submitted to the laboratory as two unique samples for analysis. Field duplicates were collected at a frequency of one duplicate for every 10 samples.

#### **5.3.2 Matrix Spike/Matrix Spike Duplicate (MS/MSD)**

MS/MSD samples were collected to document the precision and consistency of the laboratory equipment. MS/MSD samples were collected at a rate of one sample for every 10 field samples.

# Project Organizational Chart Federal Creosote Superfund Site

Manville, New Jersey



**SEVENSON**  
ENVIRONMENTAL  
SERVICES, INC.

Figure 5-1. Project Organizational Chart

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### **5.3.3 USACE QA Sampling**

USACE QA split samples were collected as follows. A sample was collected then divided into two distinct samples. The duplicate pairs were tracked so that the results could be compared. One of the samples was submitted to the subcontracted project laboratory. The other sample was submitted to USACE Environmental Chemistry Branch laboratory located in Omaha. The results of the two samples were compared for analytical method accuracy.

### **5.3.4 Data Review/Validation**

Field data were assessed by the on site QC manager. The QC manager reviewed field results for compliance with established QC criteria. Field measurements were assessed using daily instrument calibration, calibration check, and blank analysis.

Laboratory analytical data were subjected to review to assess data precision, completeness and sensitivity.

### **5.3.5 Sample Numbering**

Sample numbering scheme was developed to identify each sample designated for laboratory analysis. The purpose of this numbering scheme was to provide a tracking system for retrieval of field and analytical data of each sample. A summary of the sample numbering scheme is presented in Section 4 of the Approved Sampling and Analysis Plan submitted by SES.

## **5.4 In-Place Soil Moisture and Density Testing**

In-place soil moisture and density testing was performed as described in Section 3.10.2. Field testing was performed by subcontractor personnel using a Troxler Nuclear Moisture Density Gauge.

## **5.5 Health and Safety**

As required by the Site Safety and Health Plan (SSHP), daily tailgate meetings were conducted. Special health and safety considerations were discussed as they pertained to the daily activities. Weekly meetings were also held to review issues related to any new activities. Moreover, SES's Health and Safety Director, Paul J. Hitcho, CIH, conducted periodic Health and Safety inspections during the course of the project. A copy of the April 2002 inspection report is included in Appendix F.

General site workers were required to be trained for Hazardous Waste Operations and Emergency Response in accordance with 29 CFR 1919.120, and excavation and trenching safety trained. Individuals involved with shipping of hazardous materials were required to receive the appropriate Department of

Transportation (DOT) training. Most of the work was conducted in Level D personal protective equipment, except for personnel in direct contact with the excavated material was required to work in Level C. Ambient air monitoring, in the form of real-time VOC and dust monitoring and high-volume particulate sampling and VOC sampling was also conducted within the vicinity of the excavation areas throughout the period of construction as discussed in Section 3.11.

No incidents or injuries were reported during the course of the remedial action activities.

### **5.5.1 Personnel Exposure Air Monitoring**

Personnel exposure air monitoring was conducted during the OU2 Phase 1 remediation. The collected samples were analyzed for PAHs and BTEX in accordance with NIOSH methods 1501 and 5506, respectively. The samples were also analyzed for respirable dust as indicated in Section 3.11. All samples collected during the OU2 Phase 1 sampling events resulted in concentrations below OSHA threshold values.

### **5.5.2 Personnel Decontamination**

Personnel decontamination was performed upon exiting the exclusion zone and at the end of each work day. A nontransparent enclosure was strategically located within the decontamination pad to allow field personnel exiting the exclusion zone to change into street clothes prior to entering the support zone.

### **5.5.3 Equipment Decontamination**

All equipment exiting the exclusion zone was required to be decontaminated prior to entering the support zone or leaving the project site in accordance with the SSHP.



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## **Section 6**

# **Inspection and Certification**

### **6.1 Inspections**

In addition to the three-phase inspection, pre-final and final inspections were performed following the completion of the remedial construction. The purpose of these inspections was to ensure that all work was performed to the satisfaction of the EPA and USACE.

#### **6.1.1 Pre-Final Inspection**

A pre-final inspection was held on August 6, 2002. Representatives from all parties including EPA, USACE, and SES were present. Appendix G contains the copies of individual property pre-final inspection reports documenting punch list items requiring corrective actions.

#### **6.1.2 Final Inspection**

On December 18, 2002, upon correction of all deficiencies and submittal of outstanding project document, representatives of EPA, USACE and SES attended a Final inspection. At this time, no punch list items were identified.

On July 3, 2002, Rich Puvogel, EPA RPM and Drew Sites, NJDEP's representative inspected the site. Subsequent to the inspection, Mr. Puvogel issued a final inspection memorandum documenting the inspection. A copy of the memo is included in Appendix H.

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## Section 7

### Operation and Maintenance

The OU2 Phase 1 remediation was a permanent remedy. Therefore, long-term O&M was not required, except for maintenance of the new vegetation, which consisted of sod areas and planted trees. Maintenance activities such as mowing, removal of weed species, and watering were conducted during the first year following vegetation establishment.

#### 7.1 Warranty

As required by the contract documents, SES was responsible for the vegetation for a 12-month period following establishment.

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## Section 8

### Summary of Project Cost

OU2 Phase 1 construction contract was executed as a cost-reimbursable contract. The work was completed under PRAC Contract Number DACW41-01-D-0001, awarded through USACE Kansas City District.

#### 8.1 Remedial Construction Cost

The original negotiated contract amount for the OU2 Phase 1 remedial action at the Federal Creosote site was \$2,862,498. Project variations during the remedial effort prompted two contract modifications that increased the contract budget amount by \$723,339 to \$3,585,837. The work was executed under a cost-reimbursable contract. As a result, only actual cost occurred was reimbursed to the contractor. Total payment to SES for the OU2 Phase 1 remedial action was \$3,237,320. Table 8-1 summarizes the remedial action contract modifications.

**Table 8-1 Remedial Action Contract Modifications Summary**

MOD No.	ATP No.	Description	Amount
09	030	Additional quantities for thermal & Subtitle C	\$72,976
	031	Additional tree removal	\$1,670
	032	Additional Subtitle C, D, Concrete removal, and backfill	\$85,381
	034	Additional Subtitle C, and backfill	\$36,426
	035	Sheetpile extraction	\$198,773
	037	Additional Subtitle C, and backfill	\$47,418
	040	Bilco door and landing	\$10,406
	041	Subtitle C and D adj. to cert. tonnage	\$11,621
	042	Moving and storage	\$10,163
	043	Seeding, planting, sodding, and misc. restoration	\$51,130
	044	Misc. restoration	\$48,842
	046	Sheet extraction actual footage	\$71,134
	047	Common fill and topsoil actual quantities	\$13,357
	050	Sidewalk restoration	\$9,802
	060	Survey	\$14,547
	066	DCAA rate change per audit	\$36,746
10	081	Survey	\$2,947
<b>Total</b>			<b>\$723,339</b>

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## Section 9

# Observations and Lessons Learned

- Excavation Support System – The excavation bordered an active freight line owned by CSX Railroad. USACE engaged CSX early in the design process, which allowed for timely approval of the sheeting design.
- Pre-verification of Excavations – To the extent possible, post-excavation sampling in accordance with NJDEP criteria was conducted during the design. This allowed the contractor to excavate and backfill without waiting for post-excavation sample results.
- Community Relations - Although this report focuses on technical aspects of the project, the role of community relations during the implementation of the cleanup of OU2, Phase 1 deserves mention as a lesson learned for remediation within residential settings.

Prior to the start of work on OU2, Phase 1 properties, remediation work in the community was limited to vacant residential properties in the Lagoon B area. During the remediation of Lagoon B EPA provided residents information about remediation within the community by use of frequent one page flyers, newsletters, community advisory group meetings, interviews with the media, and one on one meetings with concerned residents. During OU1, Phase 2, remediation efforts shifted onto occupied residential properties and the same community relations tools were effectively used, however more emphasis was placed on the one on one meetings between residents and EPA's remedial project manager and community involvement coordinator.

Although one on one meetings with residents were emphasized to a greater degree during this phase of the project the most effective community relations tools which was carried over from the Lagoon B phase of work was the use of flyers. One page flyers provided updates on planned work and were distributed door to door within the community shortly before the planned activities took place. The one page flyers could be produced quickly to react to changing field conditions and were distributed either community wide or to residential properties that were to be most immediately affected by OU2, Phase 1 remediation activities. EPA received positive residential comments concerning the use of flyers to get remediation information out.

Residents were more approachable and easily engaged due to a continuous on-site presence by the RPM and the community relations coordinator. This high visibility of EPA personnel also helped to establish and preserve a high



level of public acceptance and trust. Successful community relations were cultivated using the different tools mentioned above throughout the remediation OU2, Phase 1 properties. The community exhibited a greater tolerance for inconveniences associated with remediation when they were made aware of them before they occurred. The importance of this point was further illustrated by the use of pre-verification of excavations mentioned above. Post-excavation sampling was conducted during the design stage - not at the remedial construction phase. This allowed EPA to provide residents a reasonable expectation of the boundaries and impacts remediation would have on their properties before remedial action started. Providing property owners this knowledge helped raise property owners constructive participation in the remediation and restoration process.

Environmental remediation in a residential setting must take a different approach compared to remediation of an abandoned hazardous waste site located in a remote or isolated area. The use of contractors and USACE personnel who had previous experience in remediation within residential settings was proved extremely helpful.

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## Section10

### Contact Information

Table 10-1 summarizes the key project personnel contacts.

Table 10-1 Key Project Contacts

Name	Title	Organization	Address
Rich Puvogel	Project Manager	EPA	290 Broadway New York, NY 10038
Todd Daniels	Project Manager	USACE KC	601 East 12 <sup>th</sup> Street Kansas City, MO 64106
Neal Kolb	Team Leader	USACE NY	26 Rustic Mall Manville, NJ 08835
Gordon McDonald	Project Manager	SES	2749 Lockport Road Niagara Fall, NY 14305
Kershu Tan	Project Manager	CDM	Raritan Plaza I, Raritan Center, Edison, NJ 08818

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## Section 11

### References

CDM. November 2001. *Federal Creosote Superfund Site OU2 Phase I Remedial Design Analysis*

CDM. November 2001. *Federal Creosote Superfund Site OU2 Phase I Remedial Design Specifications*

CDM. September 2000. *Groundwater and Sediments Draft Remedial Investigation Report*

SES. April 2001. *Federal Creosote Superfund Site Wastewater Treatment Plant Operations & Maintenance Manual*

SES. September 2001. *Final Sampling and Analysis Plan for the Federal Creosote Superfund Site, OU1, Phase 1*

UAI Environmental, Inc. January/February 2001. *Federal Creosote Site Odor Control Evaluation*.

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RECEIVED MAR 14 2002

**SOMERSET - UNION CONSERVATION DISTRICT**

Somerset County 4-H Center, Milltown Road  
Bridgewater, New Jersey 08807  
Telephone (908) 526-2701

March 11, 2002

USEPA Region II  
Rich Puvogel  
Jacob Javits Federal Bldg.  
New York, NY 10038

**RE: Cresote Superfund OU2 Ph. 2**  
**(plan dated 2/1/02)**  
**E.Camplain, Florence, Louise Streets**  
**Manville Borough**  
**Application #2002-7194**

Dear Mr. Puvogel:

The Somerset-Union Soil Conservation District has reviewed the above erosion control plan and certifies that the plan is in accordance with the N.J. Erosion and Sediment Control Act, Chapter 251, P.L. 1975.

This approval is limited to the soil erosion and sedimentation controls specified in this plan. It is not authorization to engage in the proposed land use unless such use has been previously approved by the municipality or other controlling agency.

All revisions and municipal renewals of this project will require resubmission and approval by the District. Any conveyance of the project (or portion thereof) will transfer full responsibility for compliance to subsequent owner(s). The District must be notified in writing of any change of ownership.

The District requires written notification prior to the start of land disturbance. Please be advised that failure to do so is considered a violation of State Law.

If there are any questions, please feel free to call our office.

Very truly yours,

**SOMERSET-UNION S.C.D.**

Kenneth B. Marsh  
District Supervisor

KBM/EHT/cah J:\Access\MASTERS\Certs-35\Cert-Let-35-2002-7194.doc

Enclosure

cc: Manville Boro Const. Off.  
Mun. Engineer  
CDM Federal Programs Corp.  
Sevenson Enviro. Services, Joel Czachorowski

500824

**SOIL EROSION & SEDIMENT CONTROL PLAN  
ADDENDUM  
REV. 1**

**Federal Creosote Superfund Project  
Somerset County, New Jersey**

Prepared For:

U.S. Army Corps of Engineers  
Kansas City District  
USACE Contract Number - DACW41-01-D-0001  
OU2, Phase 1

Prepared By:

Sevenson Environmental Services, Inc.  
2749 Lockport Road  
Niagara Falls, New York 14305

February 13, 2002



## OU2, Phase 1 Soil Erosion and Sediment Control Plan Addendum

### 1.1 *General Site Sediment Controls*

Sevenson will implement the components of a Site Soil Erosion and Sediment Control Plan as required by the Contract Drawings dated November 2001 and Revised Contract Specification Section 02485- Soil Erosion and Sediment Control. The Soil Erosion and Sediment Control Plan will be submitted to the Somerset-Union Soil Conservation District (SUSCD) for certification. A copy of the certification from SUSCD will be submitted to the USACE for their information. Prior to the start of any invasive activity the SUSCD will be notified in writing. The components of the plan are as follows:

- a) Siltation and erosion control practices will be consistent with the procedures outlined in the New Jersey Standards for Soil Erosion and Sediment Control. Siltation barriers will be installed in areas where there will be direct disturbance to the existing ground surface (i.e. The properties located on East Camplain Rd., Louise Drive, and Florence Court). Therefore, the entire outer perimeter of the excavation area will be encompassed within the siltation barriers with exception to entry and egress points necessary to gain access for construction activities. The trailer compound located in the Rustic Mall Parking Lot will be installed on top of the existing asphalt surface. Addresses to be protected are as follows:

1. 158 E. Camplain Rd.
2. 160 E. Camplain Rd.
3. 166 E. Camplain Rd.
4. 189 E. Camplain Rd.
5. 198 E. Camplain Rd.
6. 201 E. Camplain Rd.
7. 207 E. Camplain Rd.
8. 222 E. Camplain Rd.
9. 228 E. Camplain Rd.
10. 234 E. Camplain Rd.
11. 240 E. Camplain Rd.
12. 255 E. Camplain Rd.
13. CSX Railroad Right-of-Way directly behind these properties where applicable - (158-166 and 222-240 E. Camplain Rd.).
14. 104 Louise Drive

## OU2, Phase 1 Soil Erosion and Sediment Control Plan Addendum

### 15. 22 Florence Court

- b) Sedimentation barriers will be installed in all areas where the potential of soil runoff and erosion may occur. Pre-manufactured siltation fences will be used as these barriers. Siltation fences will be installed on natural ground, at the bottom of fill slopes, and in ditches and other areas where siltation is a problem and will be maintained until a grass stand has been established. These fences will be embedded to prevent water from running under them. Fences will be maintained in satisfactory condition for the duration of the project. Manufacturers data catalog to be submitted for informational purposes;
- c) Previous established grades will be maintained in a true and even condition.;
- d) Construction of a temporary decontamination pad will be performed to collect runoff from the decontamination process;
- e) Areas of bare soil exposed at any given time by construction will be restricted to a minimum. However, where bare soil is to be exposed it will be re-seeded in accordance with the New Jersey Standard for Soil Erosion and Sediment Control and Contract Specification Section 02921- Seeding Requirements;
- f) Prior to allowing any contaminated piece of equipment to leave the site the equipment will be washed down with a high pressure steam cleaner at the equipment decontamination facility;
- g) Any spread of uncontaminated mud or soil from the site will be cleaned up promptly by Severson using a powered broom attachment mounted on a skid-loader or by hand utilizing push brooms and shovels. This operation is to be performed at the discretion of the Quality Control Manager and will occur at an "as needed" interval within a reasonable allotted time frame. This operation may also include wash-down of the road area with water depending on temperature and weather conditions; and
- h) Severson's Quality Control Manager will inspect the installed siltation fences on a daily basis or more frequently at problem areas and will report any failures and repairs of the barriers on his daily QC report. Inspections will be by visual means and no effluent sampling will be performed.

### 1.2 *Stockpiles*

- a) Contaminated Material: If stockpiles are utilized the following procedures will be enforced: During periods where contaminated material excavation quantities are

## OU2, Phase 1 Soil Erosion and Sediment Control Plan Addendum

minimal, waste material will be stockpiled on contaminated areas awaiting excavation or at a larger excavation location. Stockpile construction is to be composed of the following: 1.) A level, compacted base area approximately 75'x75' in size; 2.) A 1.5-2' berm is to be constructed around the perimeter of this area with clean fill material; 3.) This bermed area is to be lined with a uniform, welded 20 mil Polyethylene liner; and 4.) 6" of clean material is to be installed on top of this liner to act as a protection buffer during load out of stockpiled material. Stockpiles will be covered with six mil polyethylene in a way to suppress any possible dust or odors emanating from material and to allow water runoff without contaminating the runoff water. Stockpiles will be kept to a minimum, typically under 100 cubic yards. Soil erosion control measures, silt fence, sand bags, etc. will be installed around stockpiles to prevent the migration of contaminated material.

- b) Common Fill Material: Typically, common fill materials are delivered to the site in the quantities required for the particular operation. By coordinating these deliveries, stockpiling of these materials is minimized or eliminated altogether. In the event stockpiling of these materials is required, stockpiling will be done in a manner to minimize runoff of the stockpiles. Polyethylene sheeting will be placed over the piles and erosion control measures (silt fence, sandbags, or hay bales) will be installed.

Sevenson will make every effort to coordinate the delivery and installation of these fill materials to minimize the quantity of material being stockpiled.

### 1.3 *Final Restoration, Maintenance, and Acceptance*

- a) All disturbed areas, once fine graded to final contours, will be seeded in accordance with Contract Specification Section 02921-Seeding.
1. When protection of newly graded areas is necessary at a time which is outside of the normal planting season, Sevenson will protect these areas by use of siltation barriers or by placing temporary straw mulch or soil erosion control blankets and fabric to prevent siltation of areas beyond the work limit.

## OU2, Phase 1 Soil Erosion and Sediment Control Plan Addendum

2. When sub-grade areas cannot be topsoiled, planted, seeded, etc. because of the season or weather conditions and will remain exposed for more than 30 days, Severson will protect these areas against erosion by use of siltation fences, straw mulch, soil erosion control blankets or fabric.
  3. All washed out areas will be re-graded to final grades.
- b) All maintenance work will be performed in accordance with the Contract Specifications 02921 and 02930 until final acceptance is granted by the COR.
- c) At the completion of seed placement, the perimeter siltation fence (if used) will be repaired or replaced by Severson and will remain in place until the grass stand has been established as required by SUSCD. Once the planted area has been established, the sedimentation barriers will be removed and disposed of off-site.

### 1.4 *Additional Somerset-Union Soil Conservation District Requirements*

- A) Drawings 1A-F indicate the approximate location of siltation fences. Fences will be installed at additional locations as required by construction activities.
- B) The rate in pounds of percentages of grass is as follows:
1. Hard Fescue 120 lbs./acre
  2. Perennial Rye 30 lbs./acre
  3. Kentucky Bluegrass 40 lbs./acre
- C) The lime and fertilizer rates are as follows:
1. Limestone - Material will contain a minimum calcium carbonate equivalent of 80%. Gradation of material will possess a minimum of 95% pass-through in a 2.36 mm (No. 8) sieve and a minimum 55% pass-through in a 0.250 mm (No. 60) sieve. To raise pH, ground limestone will be utilized.
  2. Hydrated Lime - Material will contain a minimum calcium carbonate equivalent of 110%. Gradation of material will possess a 100%

## OU2, Phase 1 Soil Erosion and Sediment Control Plan Addendum

minimum pass-through in a 2.36 mm (No. 8) sieve and a minimum 97% pass-through in a 0.250 mm (No. 60 ) sieve.

3. Burnt Lime - Material will contain a minimum calcium carbonate equivalent of 140%. Gradation of material will possess a 95% minimum pass-through in a 0.250 mm (No. 60 ) sieve.
4. Fertilizer - Material will be applied at a rate of 500 lbs./acre or 11 lbs./ft<sup>2</sup>. Composition will be 10-20-10 Nitrogen-Phosphorus-Potassium or equivalent with 50% water insoluble Nitrogen unless soil tests indicates otherwise.
5. Limestone (Pulverized Dolomitic Limestone) will be applied as follows:

	<u>Soil Texture</u>	<u>Tons/Acre</u>	<u>Lbs./Ft<sup>2</sup></u>
a)	Clay, Clay/Loam High Organic Soil	3	135
b)	Sandy Loam, Loam Silt Loam	2	90
c)	Loamy Sand, Sand	1	45

Installation to be in accordance with Table 4-1 - *Standard Vegetative Cover for Soil Stabilization* from the Standards for Soil Erosion and Sediment Control in New Jersey.

- D) Mulch will be installed on all seeded areas as specified in Contract Specification Section 02921-Seeding.





Imes E. McGreevey  
Governor



## State of New Jersey

Department of Environmental Protection  
Division of Water Quality  
P.O. Box 029 Trenton, NJ 08625-0029  
Phone: (609) 292-4860  
Fax: (609) 984-7938

Bradley M. Campbell  
Commissioner

### CERTIFIED MAIL RETURN RECEIPT REQUESTED

DEC 04 2003

Rich Puvogel, Project Manager  
USEPA  
290 Broadway  
19<sup>th</sup> Floor  
New York, NY 10278

Re: Surface Water GPA Renewal  
Category: B4B -General Permit GW Petro Prod Cleanup  
NJPDES Permit No. NJG0139050  
Federal Creosote Superfund Site  
Manville Boro, Somerset County

Dear Mr. Puvogel:



Enclosed is an Individual NJPDES/DSW General Permit Authorization under the General Groundwater Petroleum Product Cleanup (B4B) Permit which was issued by the Department on October 31, 2003. This General Permit Authorization is issued in accordance with the New Jersey Pollutant Discharge Elimination System (NJPDES) Regulations N.J.A.C. 7:14A-1 et seq.

This individual General Permit Authorization allows for the discharge of treated groundwater through the discharge outfall specified on your permit authorization page. Violation of any condition of this authorization may subject the permittee to significant penalties.

The Department recognizes that the discharge is a dewatering discharge that is expected to occur for approximately eighteen months. Please note that because this is a dewatering discharge, you are required to sample twice per week for all the parameters specified in Part III. Due to the short term nature of the discharge as well as the fact that any metals present were at average levels below the remediation standards at N.J.A.C. 7:14A-12, Appendix B, the Department has not imposed the chronic whole effluent toxicity requirements at this time. The Department reserves the right to impose such requirements in a future permit action if deemed necessary.

The enclosed Authorization to discharge groundwater under the General Permit shall expire on November 30, 2008 or the expiration date of the Individual Authorization Page. Applications for renewal of this Authorization must be submitted to the Department at least 180 days prior to expiration of the Individual Authorization pursuant to N.J.A.C. 7:14A-4.2(e)3.



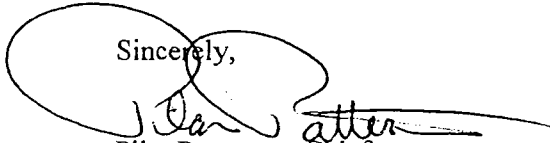
A copy of the Department's most recently revised Discharge Monitoring Report (DMR) Instruction Manual is available if needed by contacting the Bureau of Point Source Permitting. Please note that if there is a discrepancy between the General Permit Authorization and the DMR Instruction Manual, the General Permit Authorization always takes precedence.

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All monitoring shall be conducted in accordance with 1) the Department's "Field Sampling Procedures Manual" applicable at the time of sampling (N.J.A.C. 7:14A-6.5(b)4), and/or 2) the method approved by the Department in Part IV of the permit. The Field Sampling Procedures Manual is available through Maps and Publications Sales Office; Bureau of Revenue, PO Box 417, Trenton, New Jersey 08625, at (609) 777-1038.

If you have questions or comments regarding the final action, please contact Susan Rosenwinkel at (609) 292-4860.

Sincerely,

  
Pilar Patterson, Chief

Bureau of Point Source Permitting - Region 2

Enclosures

c: Permit Distribution List

Masterfile #: 60255; PI #: 92460

500833



## Table of Contents

This final general permit authorization contains the items listed below:

1. Cover Letter
2. Table of Contents
3. NJPDES Permit Authorization Page for NJG0139050
4. NJPDES Permit Authorization Page for Master General Permit NJPDES No. NJ0102709
5. USGS Map
6. Site Map
7. Part I – General Requirements: NJPDES
8. Part II – General Requirements: Discharge Categories
9. Part III – Limits and Monitoring Requirements
10. Part IV – Specific Requirements: Narrative

**New Jersey Department of Environmental Protection**



Bureau of Point Source Permitting – Region 2  
Division of Water Quality  
PO Box 029  
Trenton, NJ 08625-0029  
(609) 292-4860

**AUTHORIZATION TO DISCHARGE**  
**B4B -General Permit GW Petro Prod Cleanup**

**Facility Name:** Federal Creosote Superfund Site

**PI ID #:** 92460

**Facility Address:**

172-216 E Camplain Road  
Manville, NJ 08835

**NJPDES #:** NJG0139050

**SIC Code:** 2491

**Type of Activity:** Surface Water GPA Renewal

**Owner:**

USEPA  
290 Broadway  
19TH Floor  
New York, NY 10278

**Operating Entity:**

USEPA  
290 Broadway  
19TH Floor  
New York, NY 10278

**Issuance Date:**

11/25/2003

**Effective Date:**

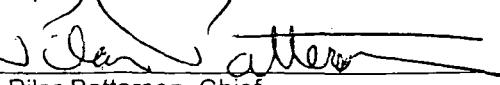
12/1/2003

**Expiration Date:**

5/31/2005

Outfall Number	Latitude	Longitude	Receiving Stream	Classification
DSN 001D	40° 32' 28"	74° 34' 42"	Millstone River	FW2-NT

Your Request for Authorization under NJPDES General Permit No. NJ0102709 has been approved by the New Jersey Department of Environmental Protection.

  
Pilar Patterson, Chief  
Bureau of Point Source Permitting – Region 2  
Division of Water Quality  
New Jersey Department of Environmental Protection

**Date:** November 25, 2003

500835



# NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM

The New Jersey Department of Environmental Protection hereby grants you a NJPDES permit for the facility/activity named in this document. This permit is the regulatory mechanism used by the Department to help ensure your discharge will not harm the environment. By complying with the terms and conditions specified, you are assuming an important role in protecting New Jersey's valuable water resources. Your acceptance of this permit is an agreement to conform with all of its provisions when constructing, installing, modifying, or operating any facility for the collection, treatment, or discharge of pollutants to waters of the state. If you have any questions about this document, please feel free to contact the Department representative listed in the permit cover letter. Your cooperation in helping us protect and safeguard our state's environment is appreciated.

Permit Number: NJ0102709

Final: Surface Water Master General Permit Renewal

**Permittee:**

NJPDES Master General Permit Program Interest  
Category B4B  
Per Individual Notice of Authorization  
Division of Water Quality  
P.O. Box 029, 401 East State Street  
Trenton, NJ 08625

**Co-Permittee:**

**Property Owner:**

NJPDES Master General Permit Program Interest  
Category B4B  
Per Individual Notice of Authorization  
Division of Water Quality  
P.O. Box 029, 401 East State Street  
Trenton, NJ 08625

**Location Of Activity:**

NJPDES Master General Permit Program Interest  
Category B4B  
Per Individual Notice of Authorization  
Division of Water Quality  
P.O. Box 029, 401 East State Street  
Trenton, NJ 08625

Authorization(s) Covered Under This Approval	Issuance Date	Effective Date	Expiration Date
B4B -General Permit GW Petro Prod Cleanup	10/31/2003	12/1/2003	11/30/2008

By Authority of:  
Commissioner's Office

  
DEP AUTHORIZATION

Pilar Patterson, Chief

Bureau of Point Source Permitting - Region 2  
Division of Water Quality

  
DEP AUTHORIZATION

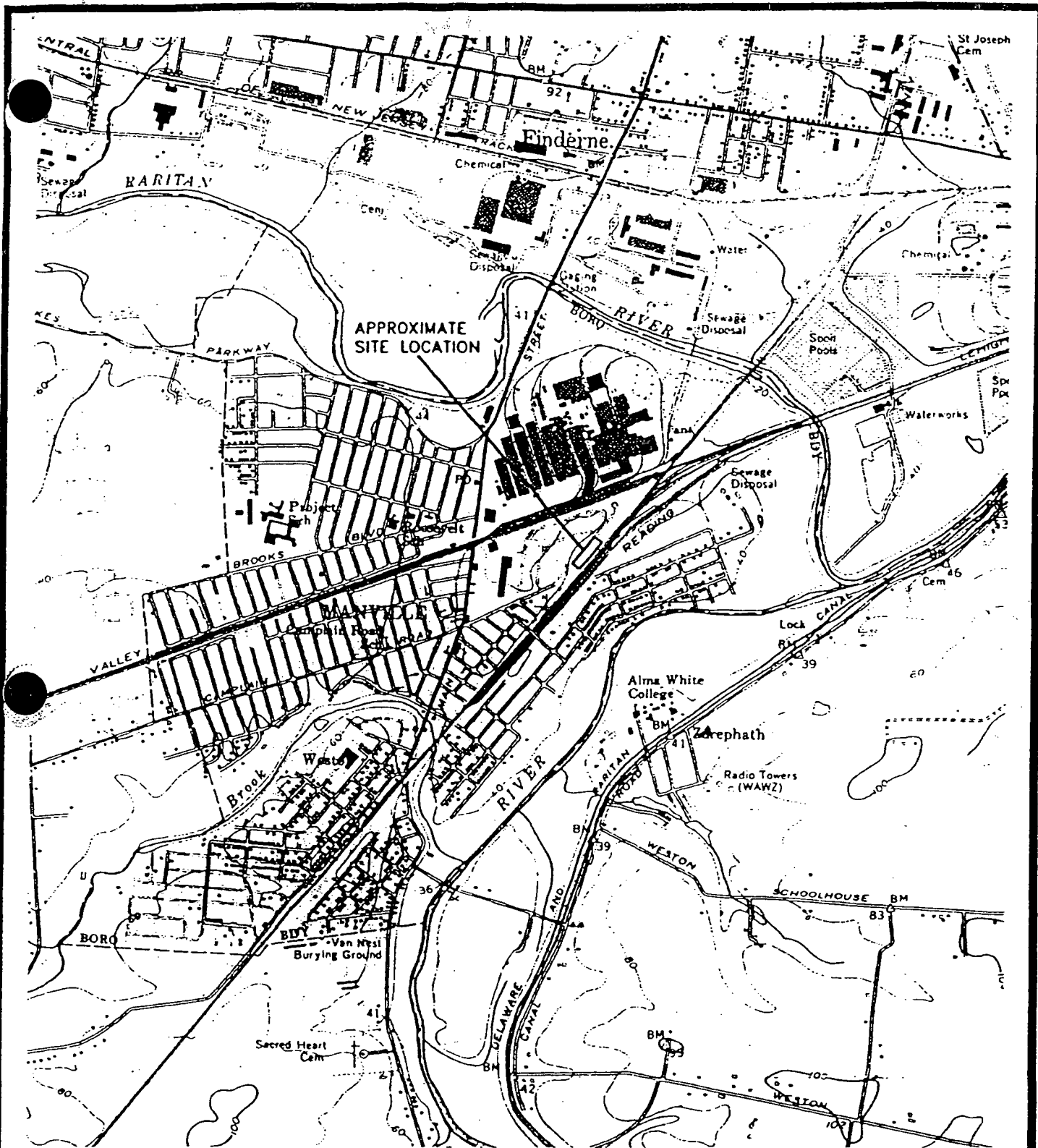
Howard Tompkins, Chief

Bureau of Point Source Permitting - Region 1  
Division of Water Quality

(Terms, conditions and provisions attached hereto)

Division of Water Quality

500836



SOURCE:  
 USGS 7.5 MINUTE QUADRANGLE  
 BOUND BROOK, NJ  
 1955  
 PHOTOREVISED 1970  
 PHOTOINSPECTION 1977

SCALE = 1:24,000  
 HUC 14:2030105110  
 EPA Reach No: 02030105-026  
 PSD: 07170000

FEDERAL CREOSOTE SUPERFUND SITE  
 MANVILLE, NEW JERSEY  
 NJPDES/DSW-CATEGORY B4B GPPC PERMIT

USGS SITE LOCATION MAP

**BBL**

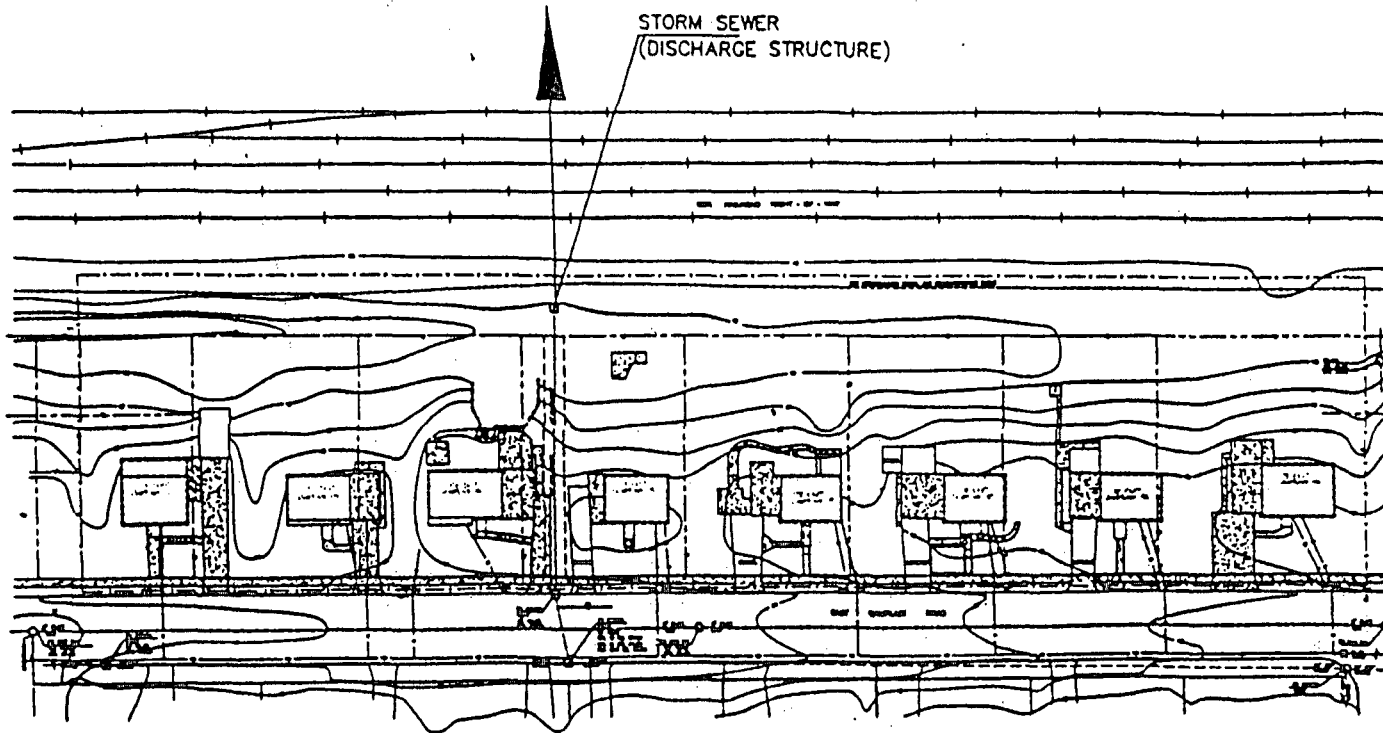
BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

FIGURE  
 C

500837

TO DSN001  
(AT MILLSTONE RIVER)

STORM SEWER  
(DISCHARGE STRUCTURE)



EXISTING FENCE/  
CONSTRUCTION LIMITS

SOURCE:  
CDM FEDERAL PROGRAMS  
CORPORATION,  
P16-EXIST.DWG, SEPTEMBER 2000,  
"EXISTING SITE CONDITIONS"



FEDERAL CREDITORS SUPERFUND SITE  
MAYVILLE, NEW JERSEY  
NJPDOS/DSW-CATEGORY B4B OPPG FOR

SITE PLAN

**BBL** BUREAU OF BUILDING & LAND ENGINEERS & ARCHITECTS

FILE  
A

500838

NOT TO SCALE  
SEE EXISTING SITE PLAN  
FOR DETAILS

## PART I GENERAL REQUIREMENTS: NJPDES

### A. General Requirements of all NJPDES Permits

#### 1. Requirements Incorporated by Reference

- a. The permittee shall comply with all conditions set forth in this permit and with all the applicable requirements incorporated into this permit by reference. The permittee is required to comply with the regulations, including those cited in paragraphs b. through e. following, which are in effect as of the effective date of the final permit.
- b. General Conditions
  - Penalties for Violations N.J.A.C. 7:14-8.1 et seq.
  - Incorporation by Reference N.J.A.C. 7:14A-2.3
  - Toxic Pollutants N.J.A.C. 7:14A-6.2(a)4i
  - Duty to Comply N.J.A.C. 7:14A-6.2(a)1 & 4
  - Duty to Mitigate N.J.A.C. 7:14A-6.2(a)5 & 11
  - Inspection and Entry N.J.A.C. 7:14A-2.11(e)
  - Enforcement Action N.J.A.C. 7:14A-2.9
  - Duty to Reapply N.J.A.C. 7:14A-4.2(e)3
  - Signatory Requirements for Applications and Reports N.J.A.C. 7:14A-4.9
  - Effect of Permit/Other Laws N.J.A.C. 7:14A-6.2(a)6 & 7 & 2.9(c)
  - Severability N.J.A.C. 7:14A-2.2
  - Administrative Continuation of Permits N.J.A.C. 7:14A-2.8
  - Permit Actions N.J.A.C. 7:14A-2.7(c)
  - Reopener Clause N.J.A.C. 7:14A-6.2(a)10
  - Permit Duration and Renewal N.J.A.C. 7:14A-2.7(a) & (b)
  - Consolidation of Permit Process N.J.A.C. 7:14A-15.5
  - Confidentiality N.J.A.C. 7:14A-18.2 & 2.11(g)
  - Fee Schedule N.J.A.C. 7:14A-3.1
  - Treatment Works Approval N.J.A.C. 7:14A-22 & 23
- c. Operation And Maintenance
  - Need to Halt or Reduce not a Defense N.J.A.C. 7:14A-2.9(b)
  - Proper Operation and Maintenance N.J.A.C. 7:14A-6.12
- d. Monitoring And Records
  - Monitoring N.J.A.C. 7:14A-6.5
  - Recordkeeping N.J.A.C. 7:14A-6.6
  - Signatory Requirements for Monitoring Reports N.J.A.C. 7:14A-6.9
- e. Reporting Requirements
  - Planned Changes N.J.A.C. 7:14A-6.7
  - Reporting of Monitoring Results N.J.A.C. 7:14A-6.8
  - Noncompliance Reporting
    - Hotline/Two Hour & Twenty-four Hour Reporting N.J.A.C. 7:14A-6.10 & 6.8(h)
    - Written Reporting N.J.A.C. 7:14A-6.10(c) & (d)
  - Duty to Provide Information N.J.A.C. 7:14A-6.10(e) & (f) & 6.8(h)
  - Schedules of Compliance N.J.A.C. 7:14A-2.11, 6.2(a)14 & 18.1
  - Transfer N.J.A.C. 7:14A-6.4

## PART II

### GENERAL REQUIREMENTS: DISCHARGE CATEGORIES

#### A. Additional Requirements Incorporated By Reference

##### 1. Requirements for Discharges to Surface Waters

- a. In addition to conditions in Part I of this permit, the conditions in this section are applicable to activities at the permitted location and are incorporated by reference. The permittee is required to comply with the regulations which are in effect as of the effective date of the final permit.
  - i. Surface Water Quality Standards N.J.A.C. 7:9B-1

#### B. General Conditions

##### 1. Scope

- a. The issuance of this permit shall not be considered as a waiver of any applicable federal, state, and local rules, regulations and ordinances.

##### 2. Permit Renewal Requirement

- a. Permit conditions remain in effect and enforceable until and unless the permit is modified, renewed or revoked by the Department.
- b. Submit a complete permit renewal application: 180 days before the the Expiration Date.

##### 3. Notification of Non-Compliance

- a. The permittee shall notify the Department of all non-compliance when required in accordance with N.J.A.C. 7:14A-6.10 by contacting the DEP HOTLINE at 1-877-WARNDEP (1-877-927-6337).
- b. The permittee shall submit a written report as required by N.J.A.C. 7:14A-6.10 within five days.

##### 4. Notification of Changes

- a. The permittee shall give written notification to the Department of any planned physical or operational alterations or additions to the permitted facility when the alteration is expected to result in a significant change in the permittee's discharge and/or residuals use or disposal practices including the cessation of discharge in accordance with N.J.A.C. 7:14A-6.7.
- b. Prior to any change in ownership, the current permittee shall comply with the requirements of N.J.A.C. 7:14A-16.2, pertaining to the notification of change in ownership.

##### 5. Access to Information

- a. The permittee shall allow an authorized representative of the Department, upon the presentation of credentials, to enter upon a person's premises, for purposes of inspection, and to access / copy any records that must be kept under the conditions of this permit.

##### 6. Operator Certification

- a. Pursuant to N.J.A.C. 7:10A-1.1 et seq. every wastewater system not exempt pursuant to N.J.A.C. 7:10A-1.1(b) requires a licensed operator. The operator of a system shall meet the Department's requirements pursuant to N.J.A.C. 7:10A-1.1 and any amendments. The name of the proposed operator, where required shall be submitted to the Department at the address below, in order that his/her qualifications may be determined prior to initiating operation of the treatment works.

- i. Notifications shall be submitted to:  
NJDEP  
Examination and Licensing Unit  
P.O. Box 417  
Trenton, New Jersey 08625  
(609)777-1012

- b. The permittee shall notify the Department of any changes in licensed operator within two weeks of the change.

#### 7. Operation Restrictions

- a. The operation of a waste treatment or disposal facility shall at no time create: (a) a discharge, except as authorized by the Department in the manner and location specified in Part III of this permit; (b) any discharge to the waters of the state or any standing or ponded condition for water or waste, except as specifically authorized by a valid NJPDES permit.

#### 8. Residuals Management

- a. The permittee shall comply with land-based sludge management criteria and shall conform with the requirements for the management of residuals and grit and screenings under N.J.A.C. 7:14A-6.15(a), which includes:
- i. Standards for the Use or Disposal of Residual, N.J.A.C. 7:14A-20;
  - ii. Section 405 of the Federal Act governing the disposal of sludge from treatment works treating domestic sewage;
  - iii. The Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., and the Solid Waste Management Rules, N.J.A.C. 7:26;
  - iv. The Sludge Quality Assurance Regulations, N.J.A.C. 7:14C;
  - v. The Statewide Sludge Management Plan promulgated pursuant to the Water Quality Planning Act, N.J.S.A. 58:11A-1 et seq., and the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq.; and
  - vi. The provisions concerning disposal of sewage sludge and septage in sanitary landfills set forth at N.J.S.A. 13:1E-42 and the Statewide Sludge Management Plan.
  - vii. Residual that is disposed in a municipal solid waste landfill unit shall meet the requirements in 40 CFR Part 258 and/or N.J.A.C. 7:26 concerning the quality of residual disposed in a municipal solid waste landfill unit. (That is, passes the Toxicity Characteristic Leaching Procedure and does not contain "free liquids" as defined at N.J.A.C. 7:14A-1.2.)
- b. If any applicable standard for residual use or disposal is promulgated under section 405(d) of the Federal Act and Sections 4 and 6 of the State Act and that standard is more stringent than any limitation on the pollutant or practice in the permit, the Department may modify or revoke and reissue the permit to conform to the standard for residual use or disposal.



- c. The permittee shall make provisions for storage, or some other approved alternative management strategy, for anticipated downtimes at a primary residual management alternative. The permittee shall not be permitted to store residual beyond the capacity of the structural treatment and storage components of the treatment works. N.J.A.C. 7:14A-20.8(a) and N.J.A.C. 7:26 provide for the temporary storage of residuals for periods not exceeding six months, provided such storage does not cause pollutants to enter surface or ground waters of the State. The storage of residual for more than six months is not authorized under this permit. However, this prohibition does not apply to residual that remains on the land for longer than six months when the person who prepares the residual demonstrates that the land on which the residual remains is not a surface disposal site or landfill. The demonstration shall explain why residual must remain on the land for longer than six months prior to final use or disposal, discuss the approximate time period during which the residual shall be used or disposed and provide documentation of ultimate residual management arrangements. Said demonstration shall be in writing, be kept on file by the person who prepares residual, and submitted to the Department upon request.
- d. The permittee shall comply with the appropriate adopted District Solid Waste or Sludge Management Plan (which by definition in N.J.A.C. 7:14A-1.2 includes Generator Sludge Management Plans), unless otherwise specifically exempted by the Department.
- e. The preparer must notify and provide information necessary to comply with the N.J.A.C. 7:14A-20 land application requirements to the person who applies bulk residual to the land. This shall include, but not be limited to, the applicable recordkeeping requirements and certification statements of 40 CFR 503.17 as referenced at N.J.A.C. 7:14A-20.7(j).
- f. The preparer who provides biosolids to another person who further prepares the biosolids for application to the land must provide this person with notification and information necessary to comply with the N.J.A.C. 7:14A-20 land application requirements.
- g. Any person who prepares bulk residual in New Jersey that is applied to land in a State other than New Jersey shall comply with the requirement at N.J.A.C. 7:14A-20.7(b)1.ix and/or 20.7(b)1.x, as applicable, to provide written notice to the Department and to the permitting authority for the State in which the bulk residual is proposed to be applied.

# PART III

## LIMITS AND MONITORING REQUIREMENTS

### A. 001D REMEDIATION EFFLUENT

#### Location Description

The facility is authorized to discharge treated dewatered groundwater into the Millstone River, classified as FW2-NT(C2), via a storm sewer at Lat. 40°32'28" & Lon. 74°34'42". Effluent sampling shall be performed after all treatment steps but prior to discharge. Influent sampling shall be performed prior to any treatment.

#### Discharge Categories

General Permit GW Petro Prod Cleanup

#### Surface Water DMR Reporting Requirements:

Submit a Monthly DMR: within twenty-five days after the end of every month beginning from the effective date of the permit (EDP).

Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements

Parameter	Sample Point	Limit	Statistical Base	Sampling Frequency	Sample Type	Monitoring Period	Phase	Quantification Limit
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT GPD	Monthly Average	2 / Week	Metered	January thru December	Final	
Flow, In Conduit or Thru Treatment Plant	Effluent Gross Value	REPORT GPD	Daily Maximum	2 / Week	Metered	January thru December	Final	
pH	Effluent Gross Value	6.0 SU	Monthly Minimum	2 / Week	Grab	January thru December	Final	
pH	Effluent Gross Value	9.0 SU	Monthly Maximum	2 / Week	Grab	January thru December	Final	
Solids, Total Suspended	Effluent Gross Value	REPORT MG/L	Monthly Average	2 / Week	Grab	January thru December	Final	
Solids, Total Suspended	Effluent Gross Value	40 MG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	
Petroleum Hydrocarbons	Effluent Gross Value	10 MG/L	Monthly Average	2 / Week	Grab	January thru December	Final	
Petroleum Hydrocarbons	Effluent Gross Value	15 MG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	
Carbon, Tot Organic (TOC)	Effluent Gross Value	REPORT MG/L	Monthly Average	2 / Week	Grab	January thru December	Final	
Carbon, Tot Organic (TOC)	Effluent Gross Value	20 MG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	
Chromium, Total (as Cr)	Effluent Gross Value	50 UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	10 Rec Quant Level
Chromium, Total (as Cr)	Effluent Gross Value	100 UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	10 Rec Quant Level
Copper, Total (as Cu)	Effluent Gross Value	50 UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	10 Rec Quant Level

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Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements

Parameter	Sample Point	Limit	Statistical Base	Sampling Frequency	Sample Type	Monitoring Period	Phase	Quantification Limit
Copper, Total (as Cu)	Effluent Gross Value	100 UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	10 Rec Quant Level
Nickel, Total (as Ni)	Effluent Gross Value	72 UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	10 Rec Quant Level
Nickel, Total (as Ni)	Effluent Gross Value	144 UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	10 Rec Quant Level
Lead, Total Recoverable	Effluent Gross Value	37 UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	10 Rec Quant Level
Lead, Total Recoverable	Effluent Gross Value	79 UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	10 Rec Quant Level
Fluoranthene	Effluent Gross Value	25 UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	10 Rec Quant Level
Fluoranthene	Effluent Gross Value	68 UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	10 Rec Quant Level
Fluorene	Effluent Gross Value	22 UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	10 Rec Quant Level
Fluorene	Effluent Gross Value	59 UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	10 Rec Quant Level
Phenanthrene	Effluent Gross Value	22 UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	10 Rec Quant Level
Phenanthrene	Effluent Gross Value	59 UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	10 Rec Quant Level
Pyrene	Effluent Gross Value	25 UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	20 Rec Quant Level
Pyrene	Effluent Gross Value	67 UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	20 Rec Quant Level
Benzo(a)anthracene	Effluent Gross Value	REPORT UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	
Benzo(a)anthracene	Effluent Gross Value	10 UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	10 Rec Quant Level
Naphthalene	Effluent Gross Value	22 UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	8 Rec Quant Level
Naphthalene	Effluent Gross Value	59 UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	8 Rec Quant Level
Methyl tert-butyl Ether	Raw Sew/influent	REPORT UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	
Methyl tert-butyl Ether	Raw Sew/influent	REPORT UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	

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Table III - A - 1: Surface Water DMR Limits and Monitoring Requirements

Parameter	Sample Point	Limit	Statistical Base	Sampling Frequency	Sample Type	Monitoring Period	Phase	Quantification Limit
Methyl tert-butyl Ether	Effluent Gross Value	70 UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	
Methyl tert-butyl Ether	Effluent Gross Value	REPORT UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	
Methyl tert-butyl Ether	Percent Removal	85 PERCENT	Monthly Av Minimum	2 / Week	Calculated	January thru December	Final	
Benzene	Effluent Gross Value	REPORT UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	7 Rec Quant Level
Benzene	Effluent Gross Value	7 UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	7 Rec Quant Level
Tetrachloroethylene	Effluent Gross Value	REPORT UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	
Tetrachloroethylene	Effluent Gross Value	16 UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	
Tertiary Butyl Alcohol (TBA)	Raw Sew/influent	REPORT UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	
Tertiary Butyl Alcohol (TBA)	Raw Sew/influent	REPORT UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	
Tertiary Butyl Alcohol (TBA)	Effluent Gross Value	REPORT UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	
Tertiary Butyl Alcohol (TBA)	Effluent Gross Value	REPORT UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	
2,4-Dimethylphenol	Effluent Gross Value	18 UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	
2,4-Dimethylphenol	Effluent Gross Value	36 UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	
Phenol Single Compound	Effluent Gross Value	REPORT UG/L	Monthly Average	2 / Week	Grab	January thru December	Final	10 Rec Quant Level
Phenol Single Compound	Effluent Gross Value	26 UG/L	Daily Maximum	2 / Week	Grab	January thru December	Final	10 Rec Quant Level

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## PART IV

### SPECIFIC REQUIREMENTS: NARRATIVE

#### General Permit GW Petro Prod Cleanup

##### A. MONITORING REQUIREMENTS

###### 1. Standard Monitoring Requirements

- a. Each analysis required by this permit shall be performed by a New Jersey Certified Laboratory that is certified to perform that analysis.
- b. The Permittee shall perform all water/wastewater analyses in accordance with the analytical test procedures specified in 40 CFR 136 unless other test procedures have been approved by the Department in writing or as otherwise specified in the permit.
- c. The permittee shall utilize analytical methods that will ensure compliance with the Quantification Levels (QLs) listed in PART III. If the permittee and/or contract laboratory determines that the QLs achieved for any pollutant(s) generally will not be as sensitive as the QLs specified in PART III, the permittee must submit a justification of such to the appropriate Bureau of Point Source Permitting, as listed in this permit authorization.
- d. All sampling shall be conducted in accordance with the Department's Field Sampling Procedures Manual; or an alternate method approved by the Department in writing.
- e. All monitoring shall be conducted as specified in Part III.
- f. All sample frequencies expressed in Part III are minimum requirements. However, if additional samples are taken, analytical results shall be reported as appropriate.
- g. Analysis for total recoverable lead shall follow the sample preparation procedures contained in the Method 200.2 "Sample Preparation Procedure for Spectrochemical Determination of Total Recoverable Elements".
- h. The permittee shall use EPA Method 624 in analyzing methyl tert butyl ether (MTBE) and tertiary butyl alcohol (TBA).
- i. Influent shall be sampled at a point prior to any treatment by the permittee's treatment units.
- j. If the effluent MTBE level is less than or equal to 70 ug/L during a calendar month, the 85% MTBE minimum percent removal limitation does not apply. If the MTBE minimum percent removal limitation does not apply, the permittee shall report "Code =N" on its monitoring report form under MTBE percent removal. If the daily maximum effluent MTBE level is greater than 70 ug/L for a calendar month, an 85% MTBE minimum percent removal limitation does apply. The permittee shall report the minimum percent removal value achieved during that calendar month on its monitoring report form under MTBE minimum percent removal.
- k. Flow shall be measured using a meter unless specified otherwise in the individual authorization.

##### B. RECORDKEEPING

###### 1. Standard Recordkeeping Requirements

- a. The permittee shall retain records of all monitoring information including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports, and all data used to complete the application for this permit.

- b. Records of monitoring information shall include the date, locations and time of sampling or measurements, the individual who performed the sampling or measurements, the date the samples were collected, the date the samples were analyzed, the individual who performed the analysis, the analytical method used, and the results.
- c. The permittee shall retain copies of all reports required by a NJPDES permit and records of all data used to complete the application for a NJPDES permit for a period of at least 5 years unless otherwise required by 40 CFR Part 503.

## C. REPORTING

### 1. Standard Reporting Requirements

- a. The permittee shall submit all required monitoring results to the DEP on the forms provided to the following addresses:
  - i. NJDEP  
Division of Water Quality  
Bureau of Permit Management  
P.O. Box 029  
Trenton, New Jersey 08625
- b. If requested by the Water Compliance and Enforcement Bureau, please send the information requested to the following address:
  - i. Northern Bureau of Water Compliance and Enforcement  
1259 Route 46 East  
Parsippany, NJ 07054-4191  
(Counties of Bergen, Essex, Hudson, Hunterdon, Morris, Passaic, Somerset, Sussex and Warren )
  - ii. Southern Bureau of Water Compliance and Enforcement  
One Port Center  
2 Riverside Drive, Suite 201  
(Counties of Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester and Salem)
  - iii. Central Bureau of Water Compliance and Enforcement  
300 Horizon Center, P.O. Box 407  
Trenton, NJ 08625-0407  
(Counties of Mercer, Middlesex, Monmouth, Ocean and Union)
- c. For submittal of paper monitoring report forms:
  - i. All monitoring reports shall be signed by the highest ranking official having day-to-day managerial and operational responsibilities for the discharging facility in accordance with N.J.A.C. 7:14A-6.9.
  - ii. The highest ranking official may delegate responsibility to sign in accordance with NJAC 7:14A-6.9(c).
- d. Monitoring reports shall be completed in accordance with the current Discharge Monitoring Report Manual and any updates.
- e. If monitoring for a parameter is not required for that monitoring period, the permittee is required to report "CODE=N" on that Monitoring Report Form.
- f. For intermittent discharges, the permittee shall obtain a sample during at least one of the discharge events occurring during a monitoring period. Place a check mark in the "No discharge this monitoring period" box on the monitoring report submittal form only if there are no discharge events during the entire monitoring period.

## D. OPERATIONAL ISSUES

**1. Operational Requirements**

- a. The treatment works shall operate at the optimal average design flow rate for maximum groundwater clean-up.
- b. No backwash from any treatment unit(s) for maintenance purposes or any other reasons shall be discharged through the authorized outfall(s).
- c. The permittee shall not attain any effluent limitations by dilution pursuant to N.J.A.C. 7:14A-6.2. Specifically, the permittee shall not pump from a recovery well and divert such waters to the treatment system for the purposes of diluting groundwater from other contaminated recovery wells.
- d. Samples taken in compliance with the specified monitoring requirements shall be taken at the discharge outfall(s) specified in Part III of this permit authorization at the nearest accessible point after final treatment but prior to actual discharge.

**E. FACILITY MANAGEMENT****1. Discharge Requirements**

- a. The permittee shall discharge at the location(s) specified in PART III of this permit.
- b. The permittee shall not discharge foam, or cause objectionable deposits, or foaming of the receiving water.
- c. The permittee's discharge shall not produce objectionable color or odor in the receiving stream.
- d. The discharge shall not exhibit a visible sheen.

**2. Applicability of Discharge Limitations and Effective Dates**

- a. This master permit includes a schedule of compliance for:  
Benzene (for discharges to saline waters for Tables A, B and D) - the initial phase limit of 50 ug/L as a daily maximum is effective until November 30, 2006. The final phase limit of 7.0 ug/L as a daily maximum is effective on December 1, 2006.  
Total Recoverable Lead - the initial phase limits of 37 ug/L as a monthly average and 79 ug/L as a daily maximum are effective until November 30, 2006. The final phase limit of 10 ug/L as a daily maximum with monthly average monitoring is effective on December 1, 2006. This schedule of compliance does not apply to Table C.  
Chronic WET (Table D only and if metals are present) - the initial phase limit of "monitoring only" is effective on the effective date of the individual authorization. The final phase limit of 61% is effective three years from the effective date of the individual authorization.

**3. Use of Chemical Addition Agents**

- a. If a permittee proposes addition of any chemical or biofouling agents in its treatment system in order to enhance treatment effectiveness and system performance, the permittee must obtain permission from the Department in writing prior to use of such compounds.
- b. The permittee shall submit a letter to the Department describing the use of such chemical addition agents, including information pertaining to dosage rates and frequency of dosage, and shall also include a material safety data sheet for the product(s).
- c. This letter shall be submitted to the appropriate Bureau of Point Source Permitting which issued the individual authorization where the address is included in the cover letter. The Department will then evaluate the submittal and notify the permittee in writing as to whether the compound can be utilized under the conditions of the individual authorization under the GPPC permit renewal. Please note that N.J.A.C. 7:14A-22.4(a)7 does not require a treatment works approval (TWA) modification for chemical addition where it is used for purposes of improving treatment system performance.

**4. Operation, Maintenance and Emergency conditions**

- a. The permittee shall operate and maintain treatment works and facilities which are installed or used by the permittee to achieve compliance with the terms and conditions of the permit as specified in the Operation & Maintenance Manual.
- b. The permittee shall develop emergency procedures to ensure effective operation of the treatment works under emergency conditions in accordance with NJAC 7:14A-6.12(d).

**5. Third Party Storm Sewers**

- a. If the permittee proposes to discharge or discharges through an off-site public or private storm drainage system, please note that this GPPC permit renewal to discharge does not exempt, nor shall be construed to exempt, the permittee from compliance with rules, regulations, policies, and/or laws lodged in any agency or subdivision of the state having legal jurisdiction over the storm sewer system proposed for use as a wastewater conveyance.

**6. Permanent Cessation of Discharge to Surface Waters**

- a. If the permittee permanently discontinues its discharge to surface waters for 30 days or more the appropriate Regional Bureau of Water and Compliance Enforcement shall be notified:
  - i. NORTHERN BUREAU (Counties of Bergen, Essex, Hudson, Hunterdon, Morris, Passaic, Somerset, Sussex and Warren) - (973) 299-7592.
  - ii. CENTRAL BUREAU (Counties of Mercer, Middlesex, Monmouth, Ocean and Union) - (609) 584-4200.
  - iii. SOUTHERN BUREAU (Counties of Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester and Salem) - (609) 968-2640.

**7. Revocation of an Individual Authorization under the GPPC Permit.**

- a. If the permittee has permanently ceased its discharge to surface water, the permittee can request revocation of its individual authorization under the GPPC permit. The permittee can obtain the necessary revocation forms by accessing [www.state.nj.us/dep/dwq](http://www.state.nj.us/dep/dwq) or by contacting the Department's Bureau of Permit Management at (609) 984-4428. The permittee can also contact the appropriate Regional Enforcement Office for further guidance on closure proceedings.
- b. Upon receipt of an administratively complete revocation request, the Department will verify with the appropriate Regional Enforcement Office that the discharge has ceased and that the treatment works has undergone closure, in conformance with N.J.A.C. 7:14A-23.34. The Department will then revoke such individual authorization by preparing a copy of the individual authorization page showing the revocation date of the individual authorization and sending such to the permittee. However, the Department will not revoke an individual authorization if the Site Remediation Program disagrees that revocation is appropriate.

**F. CONDITIONS FOR MODIFICATION****1. Causes for modification**

- a. Pursuant to N.J.A.C. 7:14A-6.2(a)(10)(iii), the Department may modify or revoke and reissue any permit to incorporate limitations or requirements to control the discharge of toxic pollutants, including whole effluent, chronic and acute toxicity requirements, chemical specific limitations or toxicity reduction requirements, as applicable.
- b. The Department may incorporate requirements to file monitoring data required by this permit electronically through a minor modification in accordance with N.J.A.C. 7:14A-16.5(a)1.



Appendix C

500850



## State of New Jersey

Department of Environmental Protection

Municipal Finance and Construction Element

Division of Water Quality

P.O. Box 425

Trenton, New Jersey 08625

Fax: (609) 633-8165

www.state.nj.us/dep/dwq

DONALD T. DiFRANCESCO  
Acting Governor

Robert C. Shinn, Jr.  
Commissioner

USEPA  
290 Broadway, 19th Fl  
New York, NY 10007-1866

August 21, 2001

Gentlemen:

There is enclosed a permit issued to you pursuant to Title 58 of the Revised Statutes of New Jersey and in consideration of your application received on 07/17/2001 signed by Richard Puvogel, Remedial Project Manager, and Andrew N. Johnson, P.E.

The permit is for the construction and operation of a treatment works in Manville Boro, New Jersey and subject to the conditions as noted on the permit.

This approval is valid for a period of two (2) years from the issuance date, unless otherwise stated in the attached approval document. This approval shall expire unless building, installing or modifying of the treatment works has begun within the initial approval period. Treatment works approvals may be extended beyond the original two year approval date, to a maximum period of five years from the original issuance date, in accordance with the terms and conditions contained in N.J.A.C. 7:14A-22.12. A time extension request must be received by the Department prior to the permit's expiration date. Time extension requests shall be submitted to:

Bureau of Administration and Management  
Municipal Finance and Construction Element  
P.O. Box 425  
401 E. State St., 3rd Floor  
Trenton, New Jersey 08625

If you have any questions regarding the permit, please contact me by calling (609) 633-1208.

Sincerely,

Nicholas Horiates

Supervising Environmental Specialist

Bureau of Administration and Management

01-0568

Enclosure

cc: Blasland, Bouck and Lee



STATE OF NEW JERSEY  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
P.O. Box 402, TRENTON, NJ 08625-0402

**PERMIT TO CONSTRUCT AND OPERATE\* TREATMENT WORKS**

*\*Local Agency approval required prior to operation*

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulation.

<b>PERMIT NO.</b>	<b>ISSUANCE DATE</b>	<b>EXPIRATION DATE</b>	<b>DESIGN FLOW</b>
01-0568	08/21/2001	08/20/2003	.72 M.G.D.

**NAME AND ADDRESS OF APPLICANT**

USEPA  
290 Broadway, 19th Fl  
New York NY 10007-1866

**LOCATION OF ACTIVITY**

Manville Boro  
Somerset County

**This permit grants permission to:**

Construct and operate an oil/water separator, a polymer feed system, a settling tank, two (2) sediment filters, two (2) 30,000-pound carbon adsorption units and 3 holding tanks (total rated capacity @ 500 GPM) for groundwater remediation at the Federal Creosote Superfund Site, 172-216 E. Camplain Road, Lot 36 and 37, Block 315, in the Borough of Manville, Somerset County.

**According to the plans entitled:**

"Federal Creosote Superfund Site, Manville, New Jersey", prepared by Blasland, Bouck and Lee, Inc., dated July 16, 2001, unrevised, sheets 2-1, 2-2 and 2-3.

**and according to the specifications entitled:**

Construction Specifications, Federal Creosote Superfund Site, Manville, New Jersey", signed and sealed by Andrew N. Johnson, P.E., dated July 16, 2001.

Prepared by

Nicholas Horiates  
Supervising Environmental Specialist

APPROVED by the Department of Environmental Protection

Eugene Chebra, P.E., P.P., Chief  
Bureau of Administration and Management

*This permit is also subject to special provisos and general conditions stipulated on the attached page(s) which are agreed to by the permittee upon acceptance of the permit.*

## Department of Environmental Protection of the State of New Jersey



*This Certifies That*

JAMES C. RUSSELL

*Has passed a satisfactory examination and is hereby authorized to  
operate a*

N-4 Industrial Wastewater Treatment System

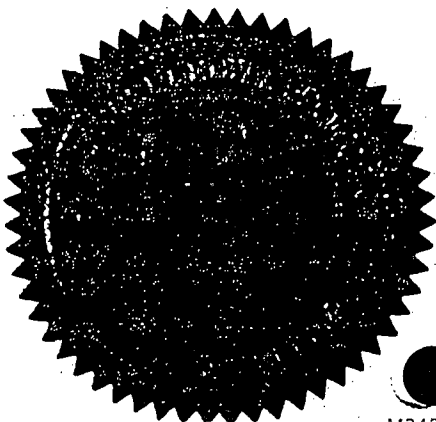
*In accordance with the classification prescribed on the annual license therefor.  
Licenses are Renewable.*

*In Witness Whereof, I have hereunto set  
my hand and caused the Seal of the State  
Department of Environmental Protection  
to be affixed.*

Registry No. **N** 1081

Trenton, New Jersey

10 19 90



*John A. Gas...*  
Commissioner

STATE OF NEW JERSEY  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
Examination & Licensing Unit  
PO BOX 441  
Trenton, NJ 08625-0411  
(609)-777-1013

|||||  
JAMES RUSSELL

*Please detach your license and carry it with  
you for identification purposes.*

DEPARTMENT OF  
ENVIRONMENTAL PROTECTION

STATE OF  
NEW JERSEY

*Hereby Certifies the Goodstanding of:*  
JAMES RUSSELL

License No. [REDACTED] Reg no.  
as a licensed:

M4 INDUSTRIAL

Expires: 08/30/01

Document#: 001083100

TO DETACH

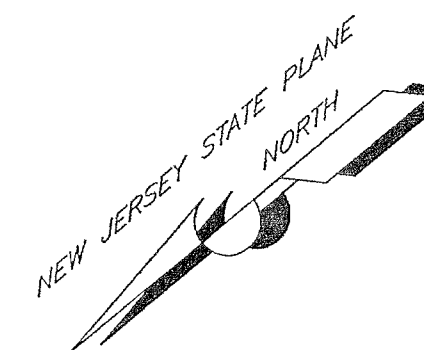
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Document #:001083100

500854



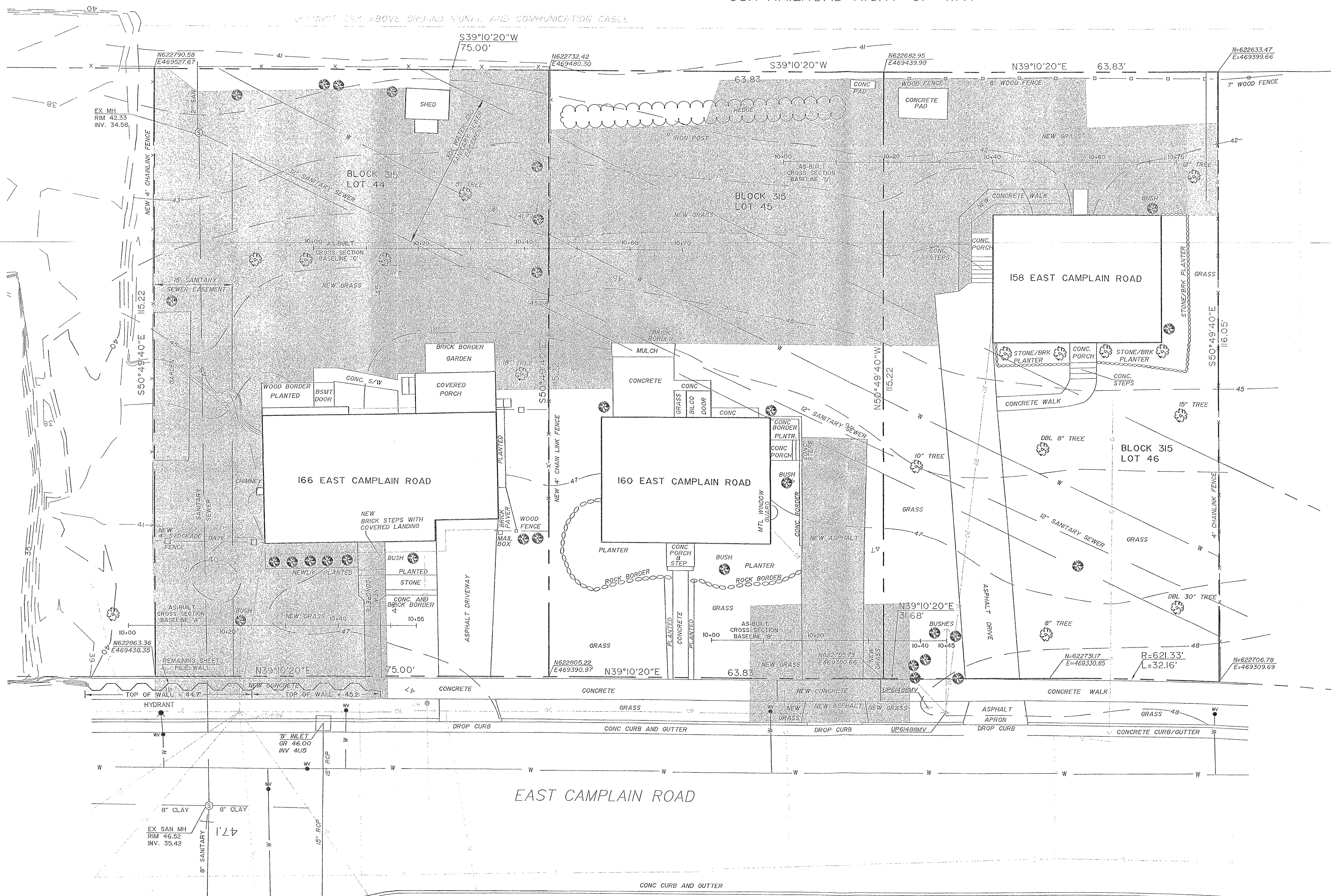




CSX UNDERGROUND SIGNAL AND COMMUNICATIONS CABLE

# CSX RAILROAD RIGHT-OF-WAY

EXISTING CSX ABOVE GROUND SIGNAL AND COMMUNICATION CABLE



## LEGEND

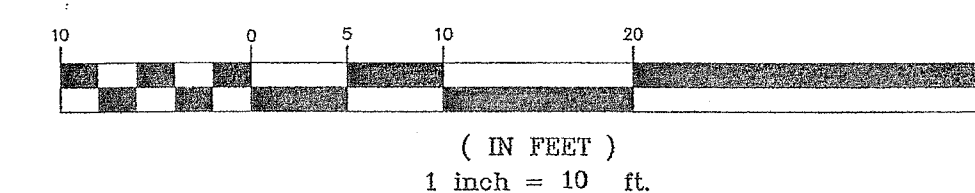
- 38' FINAL RESTORATION CONTOURS
- PROPERTY LINES
- CURB LINE
- CHAIN LINK/WIRE FENCES
- WOOD FENCES
- OVERHEAD ELECTRIC WIRES
- UNDERGROUND WATER LINE
- UNDERGROUND GAS LINE
- HEDGE ROW
- WATER VALVE
- GAS VALVE
- FIRE HYDRANT
- BUSH/SHRUB
- TREE

NOTE: NOT ALL FEATURES IN THE LEGEND MAY APPEAR ON THIS MAP.

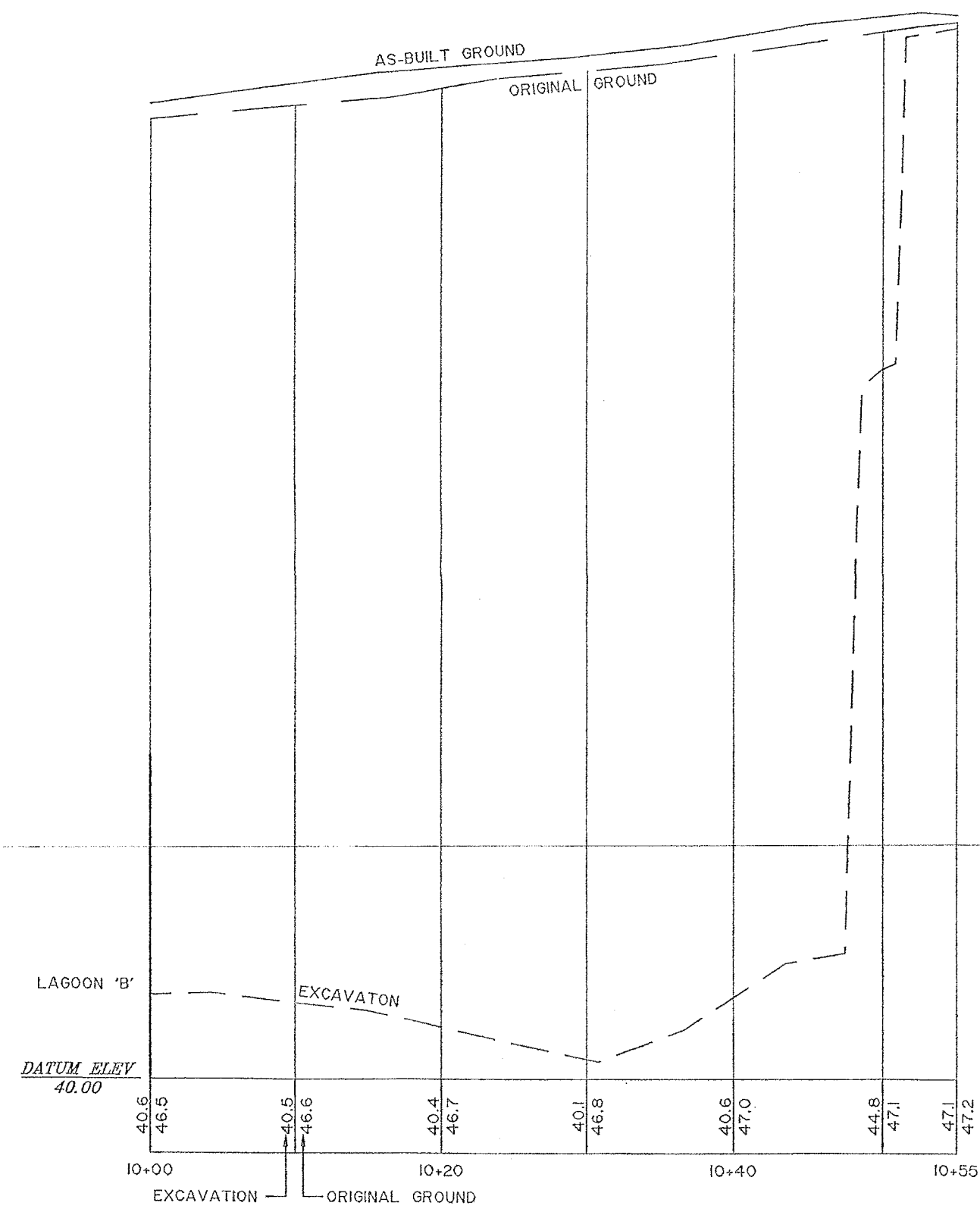
## NOTES

1. THIS MAP WAS CREATED TO SHOW THE AS-BUILT CONDITIONS AS OF OCTOBER 2002 AND SHOULD NOT BE USED FOR OTHER THAN ITS INTENDED PURPOSE.
2. SHADING REPRESENTS LIMIT OF DISTURBANCE/RESTORATION.
3. PHYSICAL FEATURES SHOWN HEREON REPRESENT PRE CONSTRUCTION CONDITION UNLESS SPECIFICALLY NOTED AS NEW.

## GRAPHIC SCALE

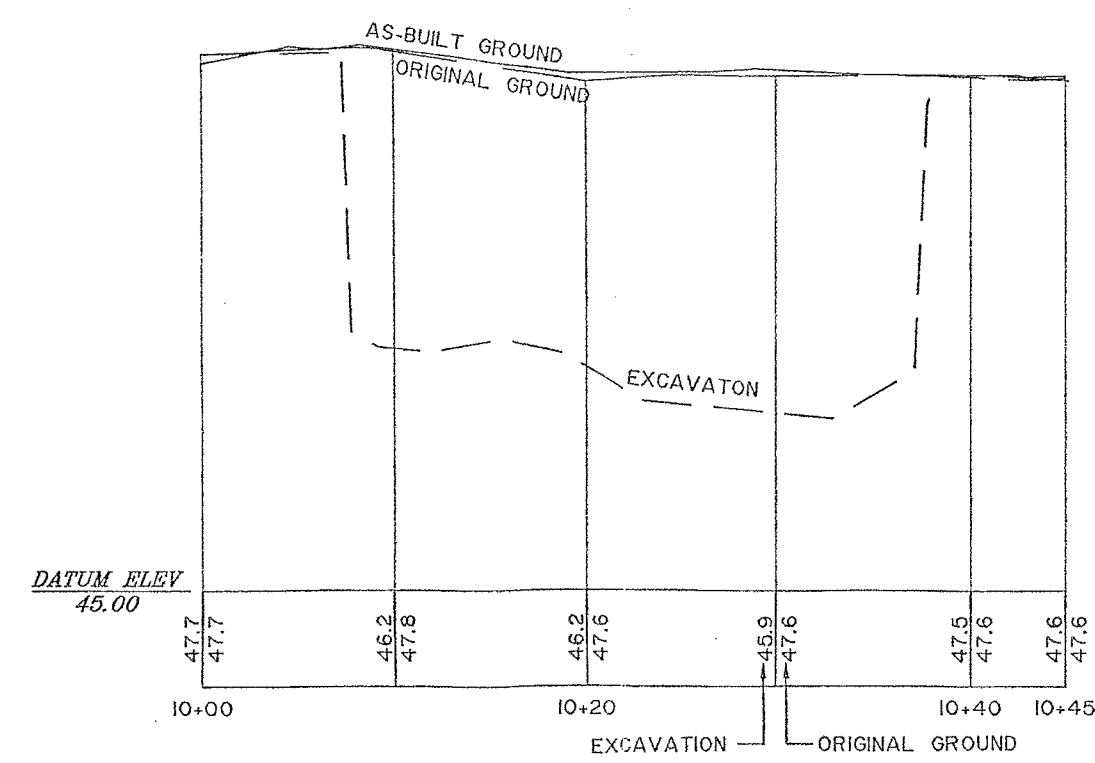






158, 160, 166 E. CAMPLAIN ROAD  
EXCAVATION CROSS SECTION 'A'

SCALE: Horiz. 1" = 10'  
Vert. 1" = 1'



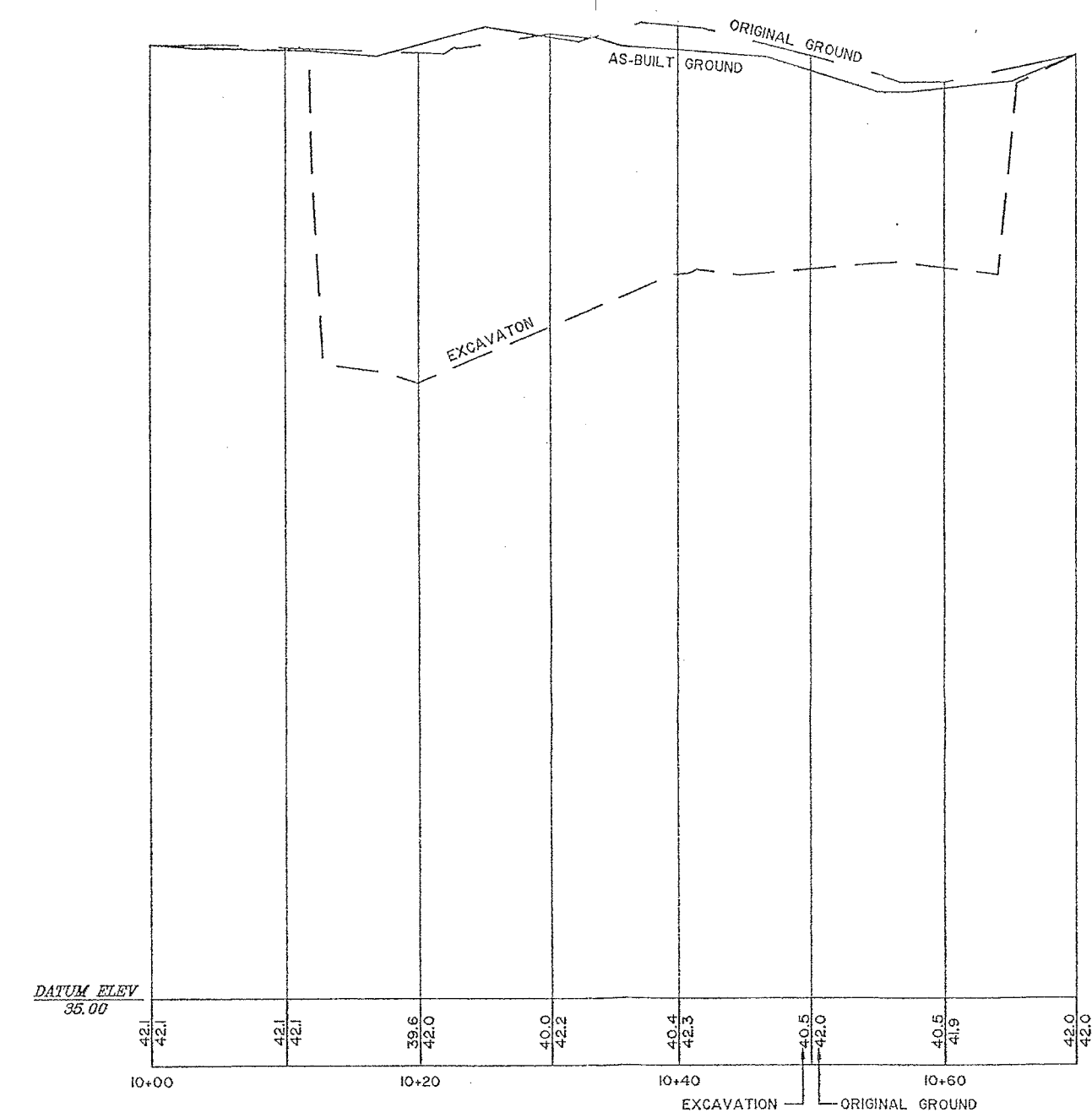
158, 160, 166 E. CAMPLAIN ROAD  
EXCAVATION CROSS SECTION 'B'

SCALE: Horiz. 1" = 10'  
Vert. 1" = 1'



158, 160, 166 E. CAMPLAIN ROAD  
EXCAVATION CROSS SECTION 'C'

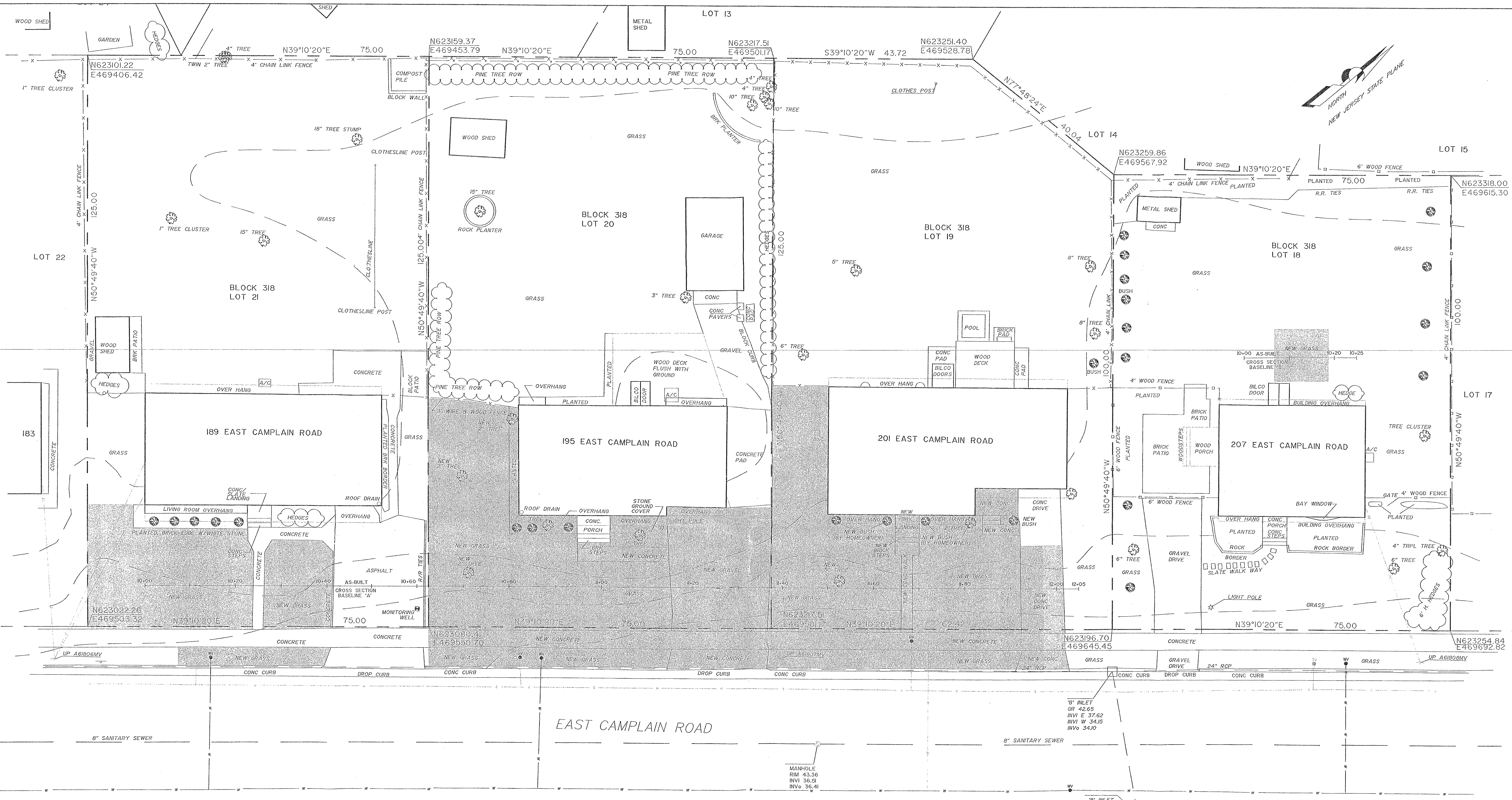
SCALE: Horiz. 1" = 10'  
Vert. 1" = 1'



158, 160, 166 E. CAMPLAIN ROAD  
EXCAVATION CROSS SECTION 'D'

SCALE: Horiz. 1" = 10'  
Vert. 1" = 1'





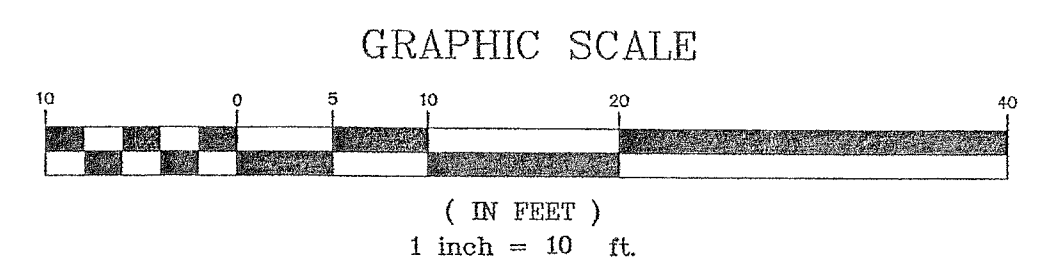
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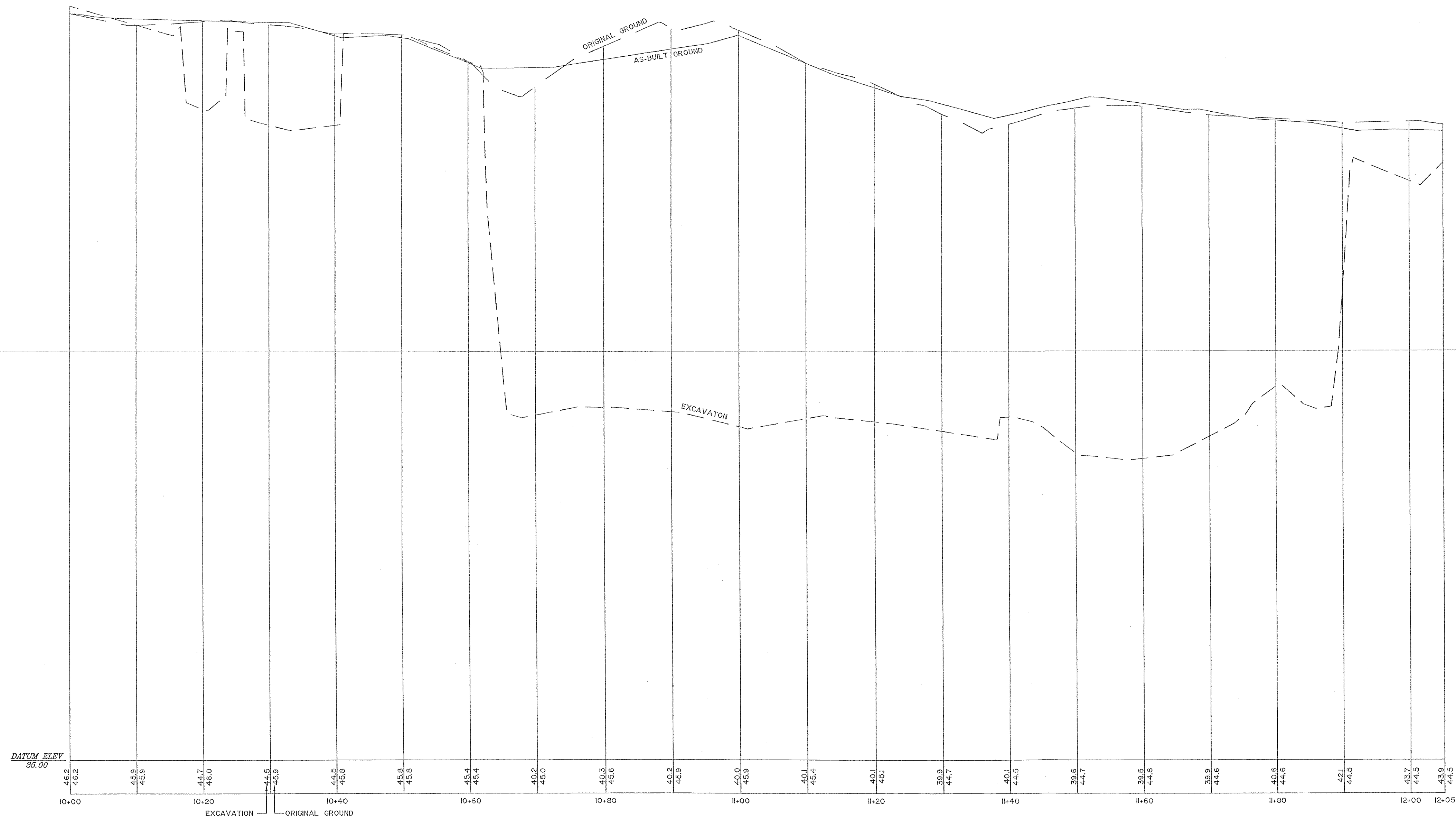
	FINAL RESTORATION CONTOURS
	PROPERTY LINES
	CURB LINE
	CHAIN LINK/WIRE FENCES
	WOOD FENCES
	OVERHEAD ELECTRIC WIRES
	UNDERGROUND WATER LINE
	UNDERGROUND GAS LINE
	HEDGE ROW
	WATER VALVE
	GAS VALVE
	FIRE HYDRANT
	BUSH/SHRUB
	TREE

NOTE: NOT ALL FEATURES IN THE LEGEND MAY APPEAR ON THIS MAP.

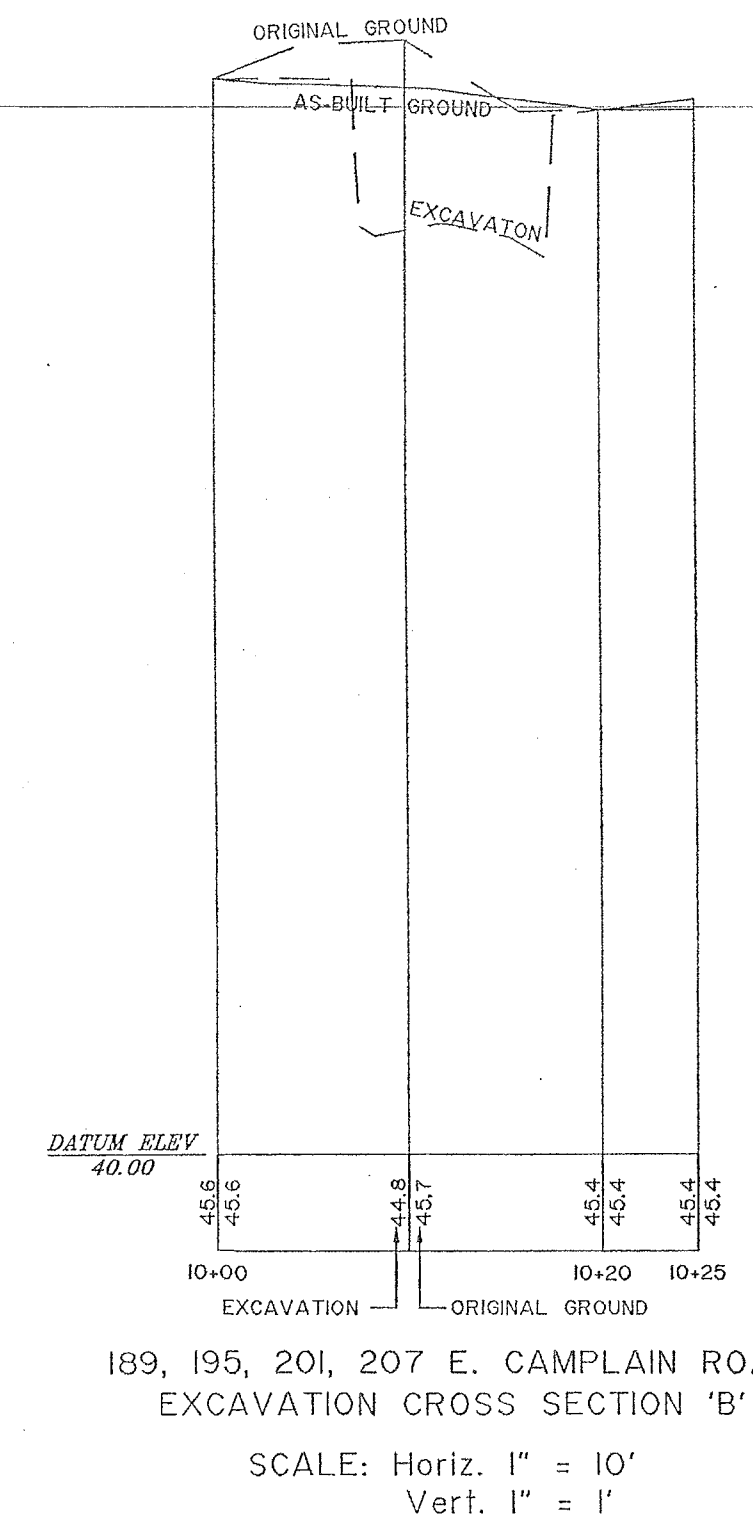
**NOTES**

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189, 195, 201, 207 E. CAMPLAIN ROAD  
EXCAVATION CROSS SECTION 'A'  
SCALE: Horiz. 1" = 10'  
Vert. 1" = 1'

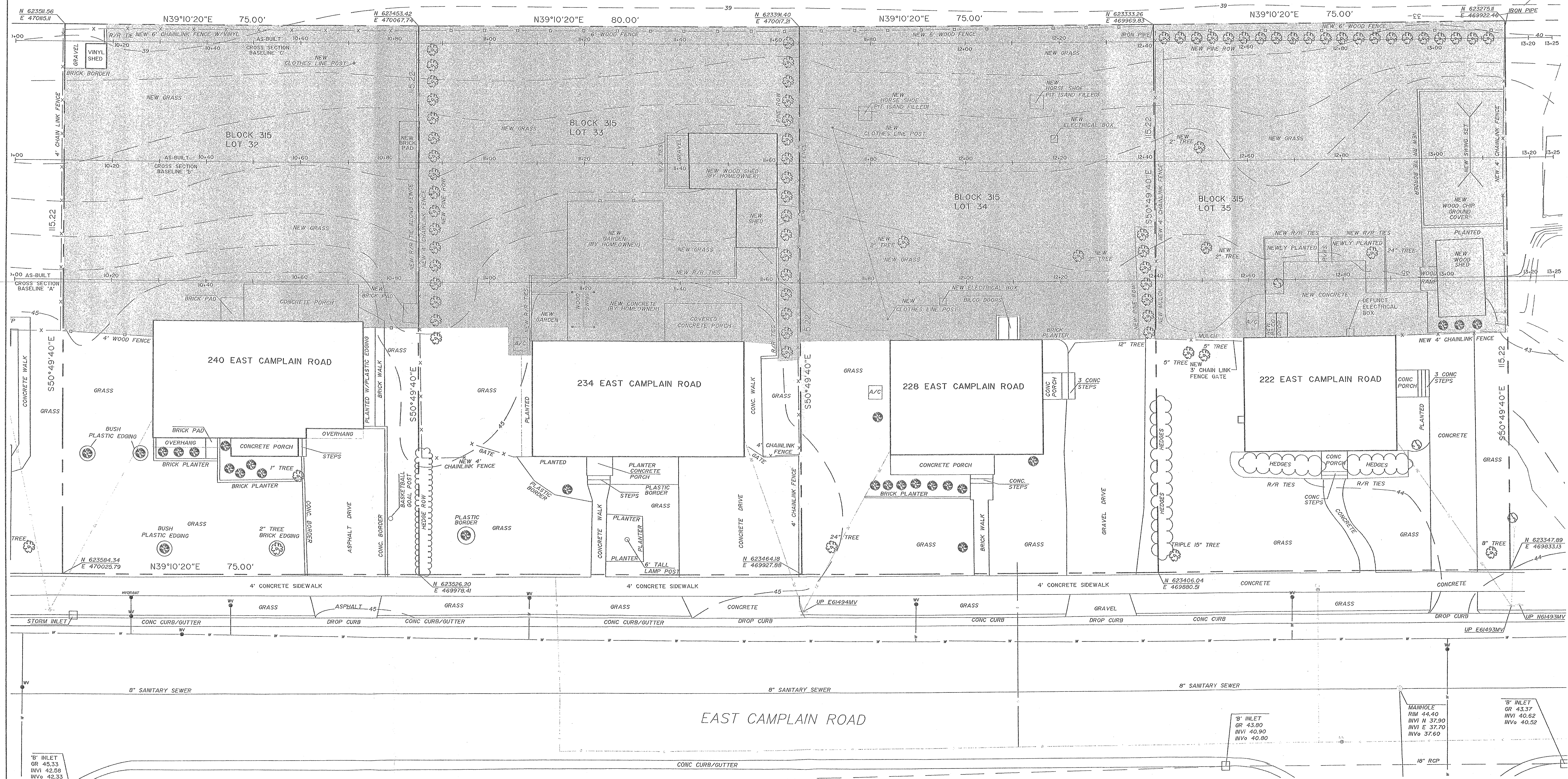


189, 195, 201, 207 E. CAMPLAIN ROAD  
EXCAVATION CROSS SECTION 'B'  
SCALE: Horiz. 1" = 10'  
Vert. 1" = 1'



CSX RAILROAD RIGHT-OF-WAY

DEFUNCT CSX ABOVE GROUND SIGNAL AND COMMUNICATION CABLE



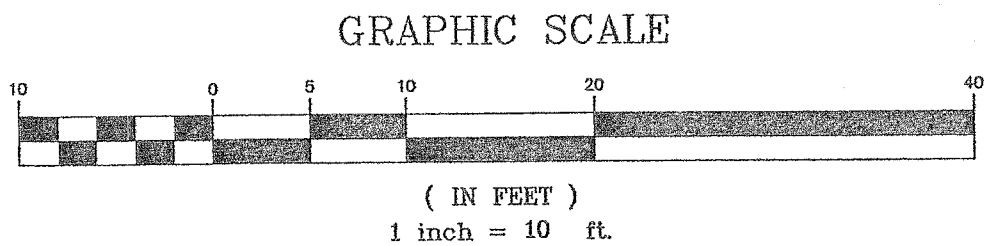
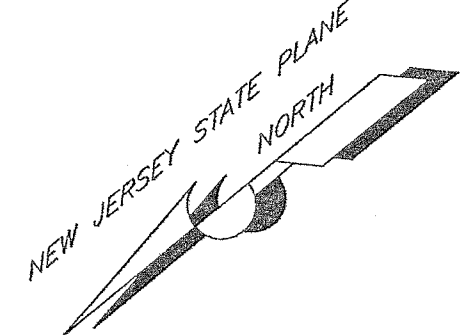
LEGEND

- FINAL RESTORATION CONTOURS
- PROPERTY LINES
- CURB LINE
- CHAIN LINK/WIRE FENCES
- WOOD FENCES
- OVERHEAD ELECTRIC WIRES
- UNDERGROUND WATER LINE
- UNDERGROUND GAS LINE
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- WATER VALVE
- GAS VALVE
- FIRE HYDRANT
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- TREE

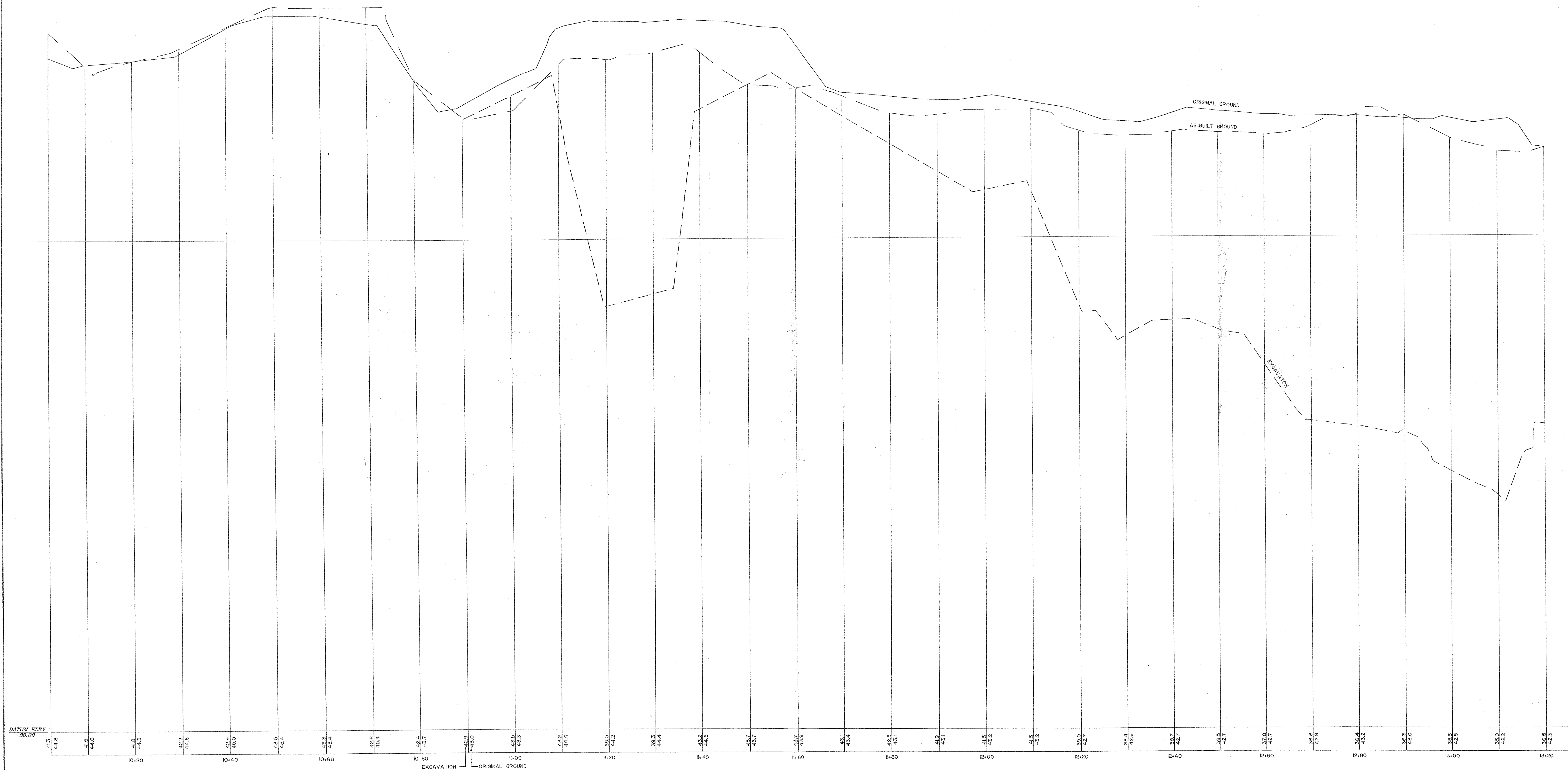
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NOTES

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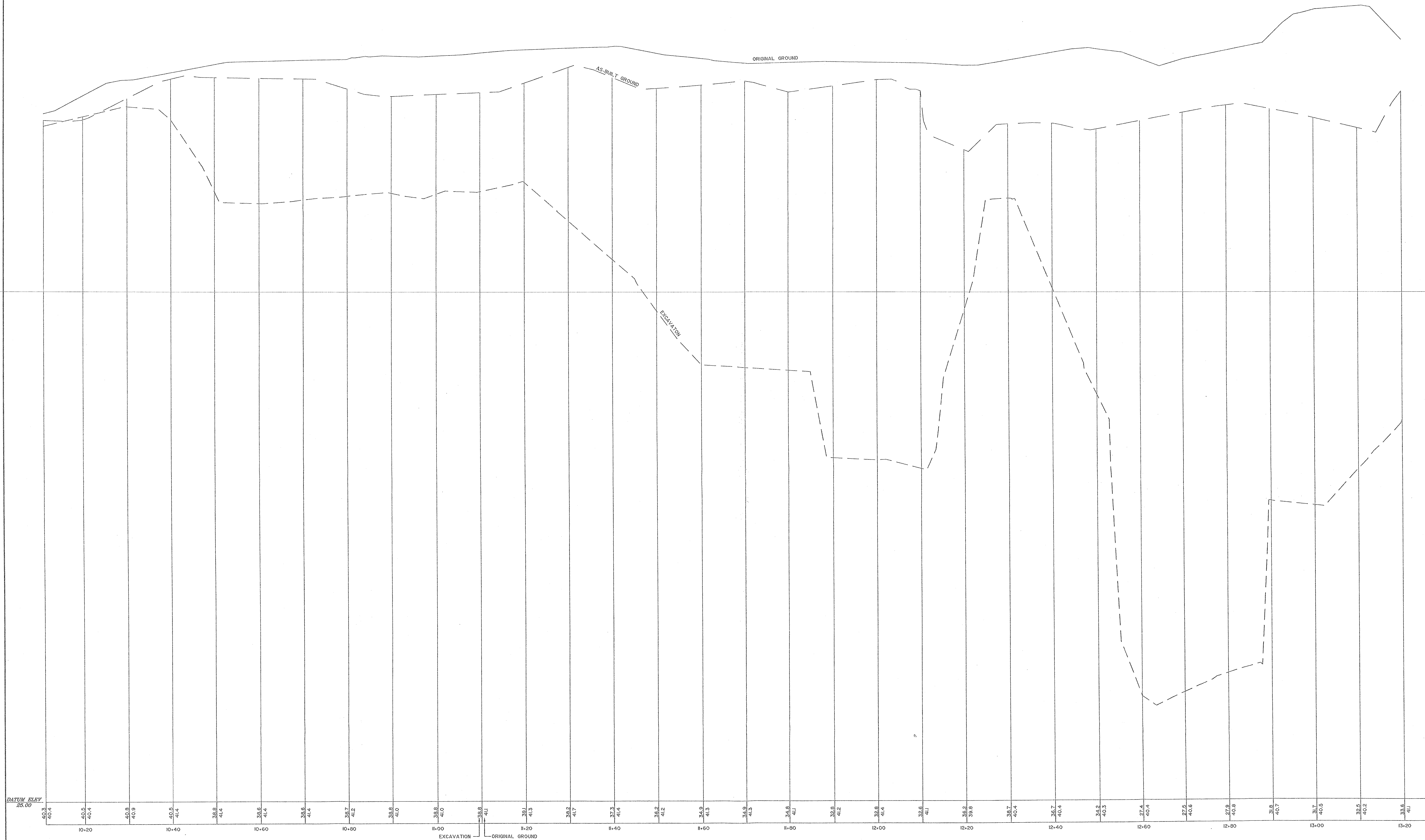




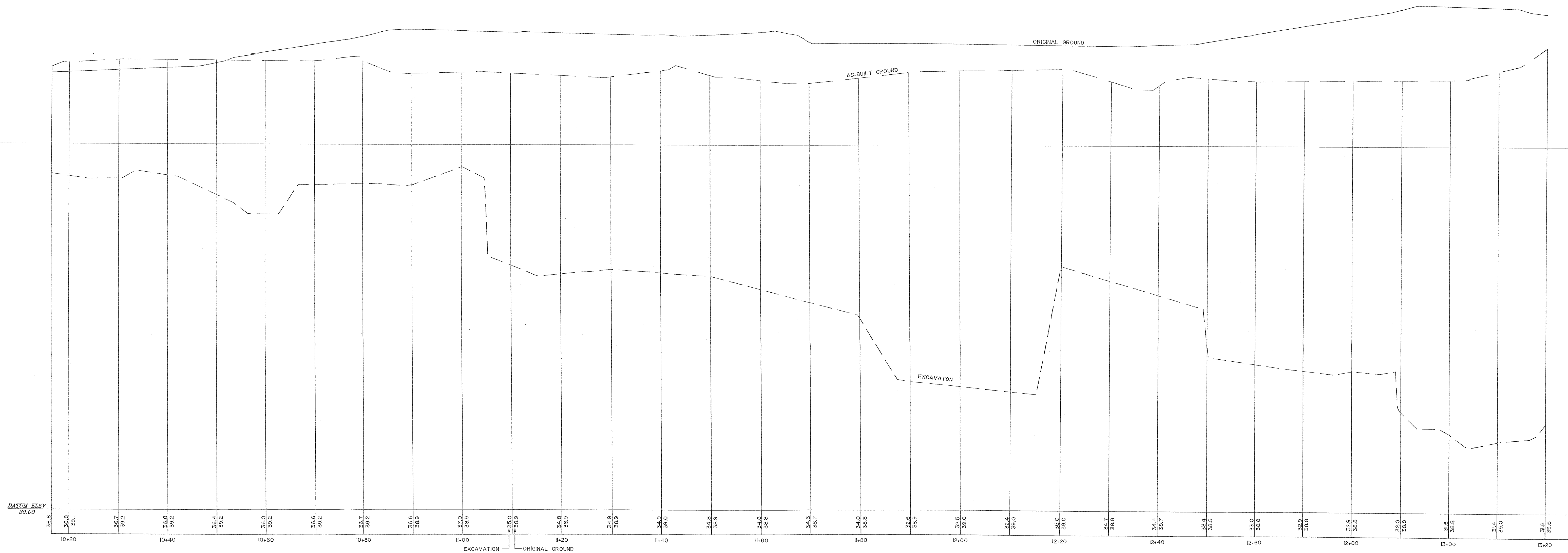


222, 228, 234, 240 E. CAMPLAIN ROAD  
EXCAVATION CROSS SECTION 'A'

SCALE: Horiz. 1" = 10'  
Vert. 1" = 1'

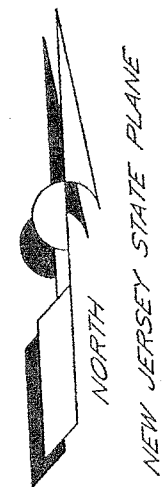
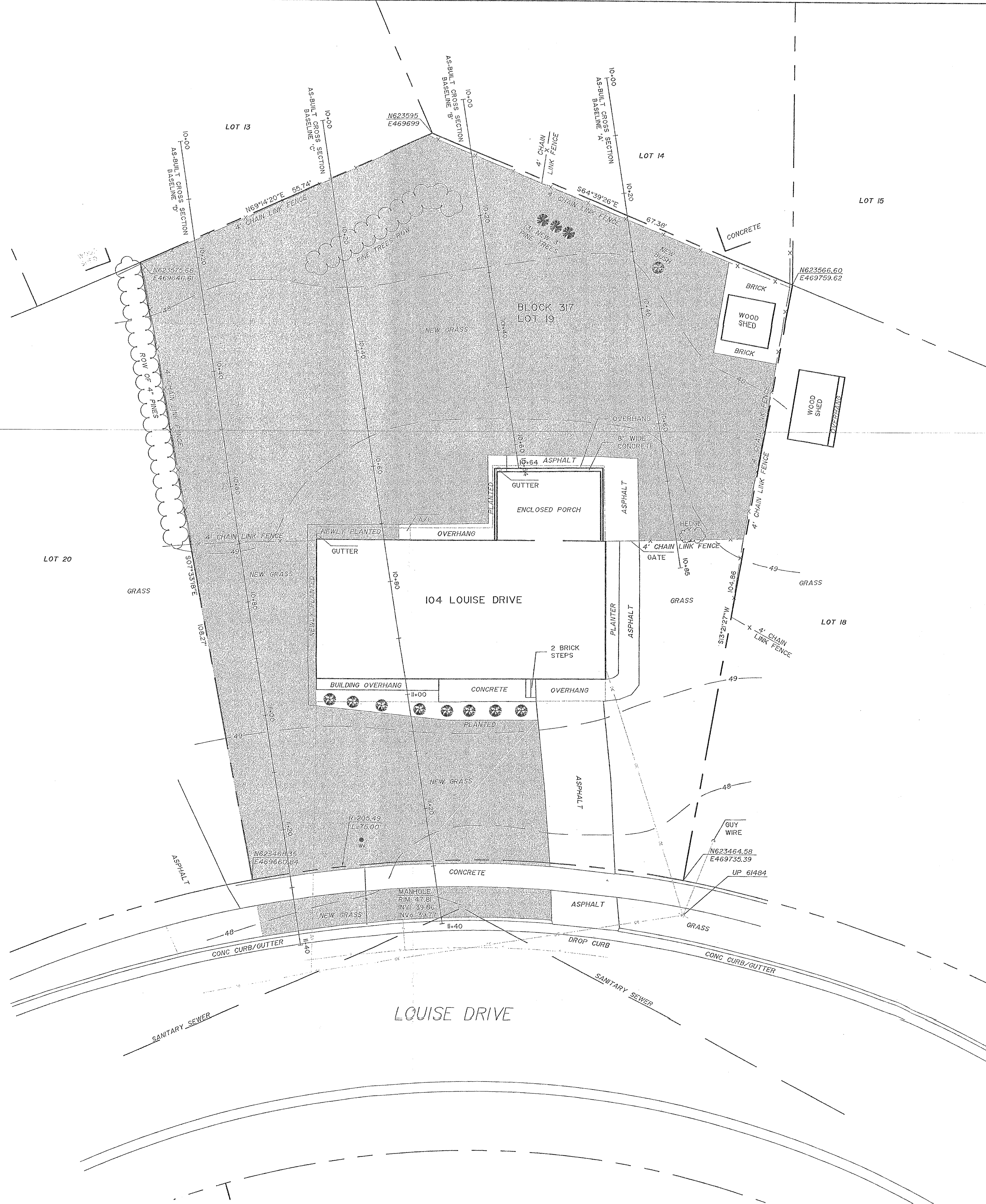


222, 228, 234, 240 E. CAMPLAIN ROAD  
EXCAVATION CROSS SECTION 'B'  
SCALE: Horiz. 1" = 10'  
Vert. 1" = 1'



222, 228, 234, 240 E. CAMPLAIN ROAD  
EXCAVATION CROSS SECTION 'C'  
SCALE: Horiz. 1" = 10'  
Vert. 1" = 1'





**LEGEND**

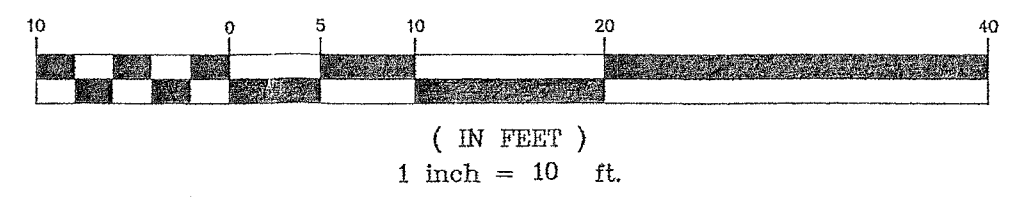
- FINAL RESTORATION CONTOURS
- PROPERTY LINES
- CURB LINE
- CHAIN LINK/WIRE FENCES
- WOOD FENCES
- OVERHEAD ELECTRIC WIRES
- UNDERGROUND WATER LINE
- UNDERGROUND GAS LINE
- HEDGE ROW
- WATER VALVE
- GAS VALVE
- FIRE HYDRANT
- BUSH/SHRUB
- TREE

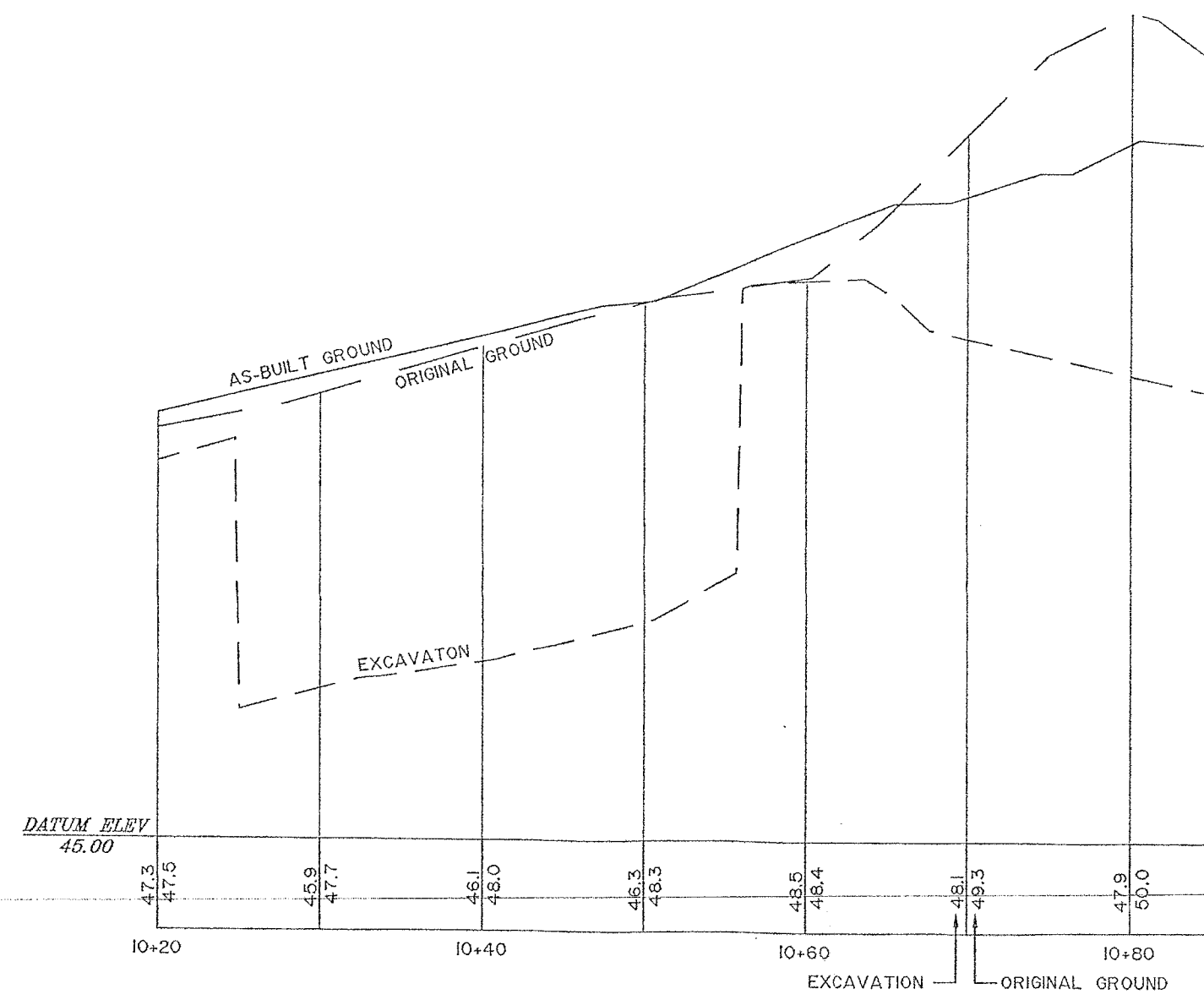
NOTE: NOT ALL FEATURES IN THE LEGEND MAY APPEAR ON THIS MAP.

**NOTES**

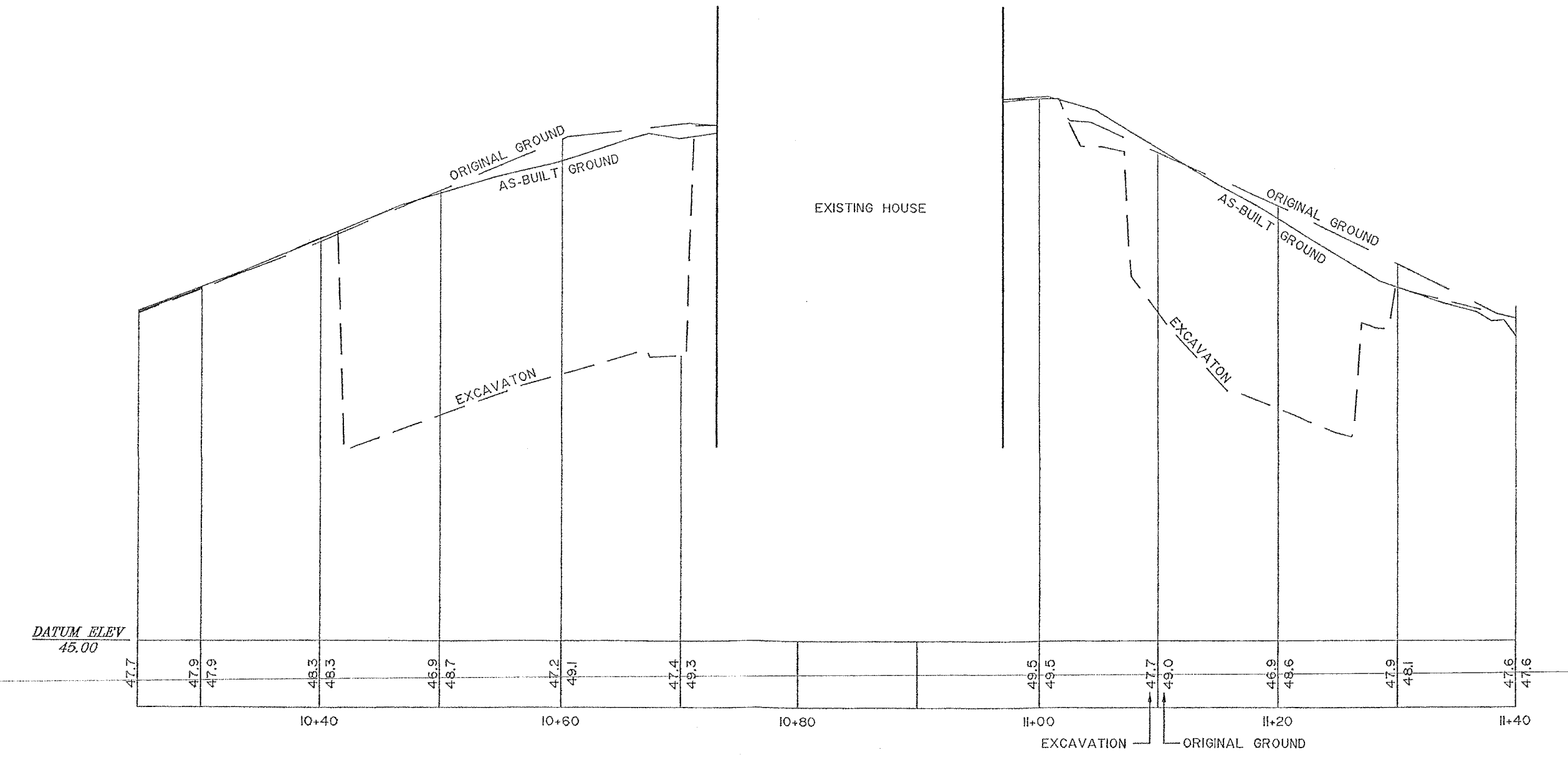
1. THIS MAP WAS CREATED TO SHOW THE AS-BUILT CONDITIONS AS OF OCTOBER 2002 AND SHOULD NOT BE USED FOR OTHER THAN ITS INTENDED PURPOSE.
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**GRAPHIC SCALE**

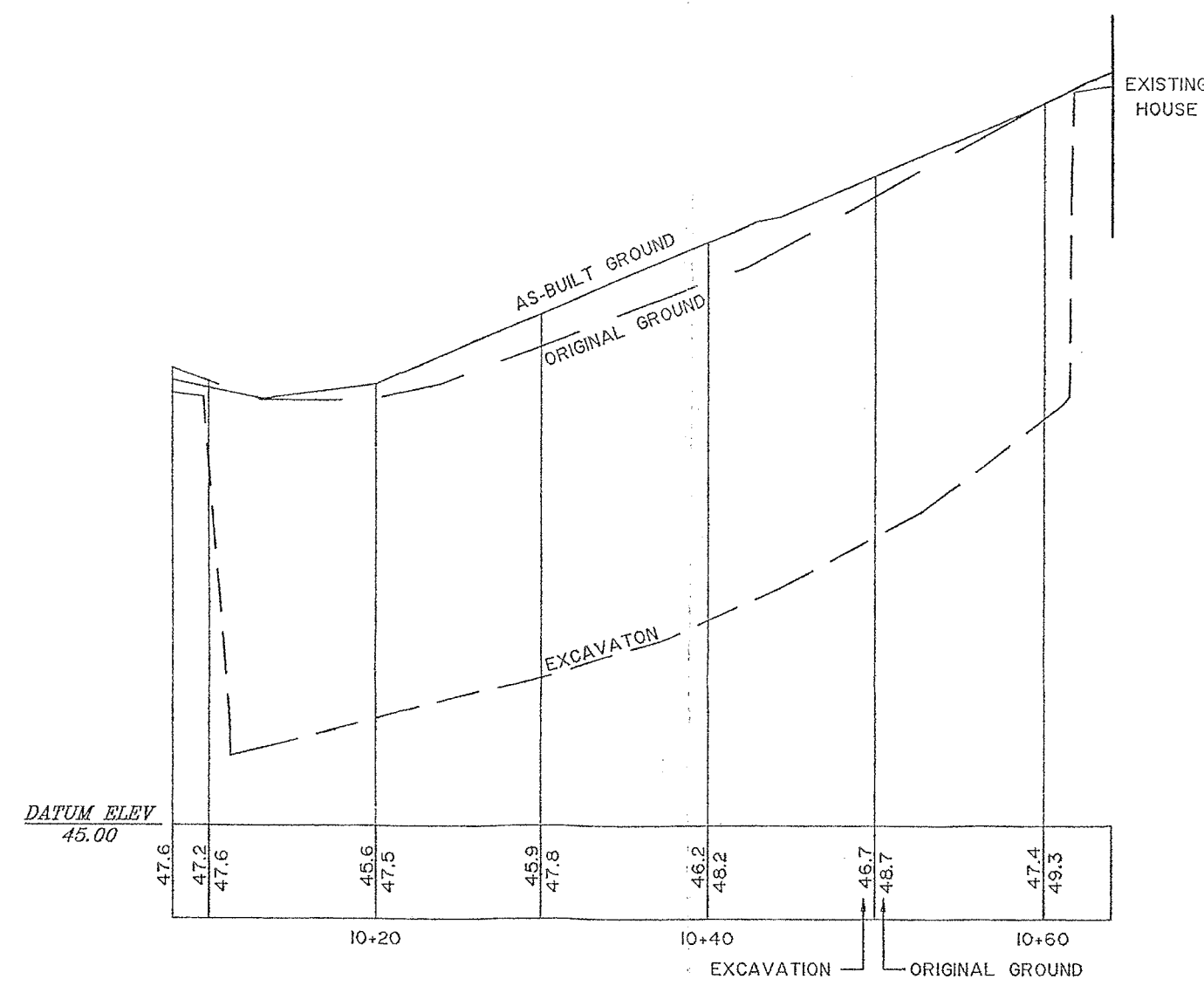




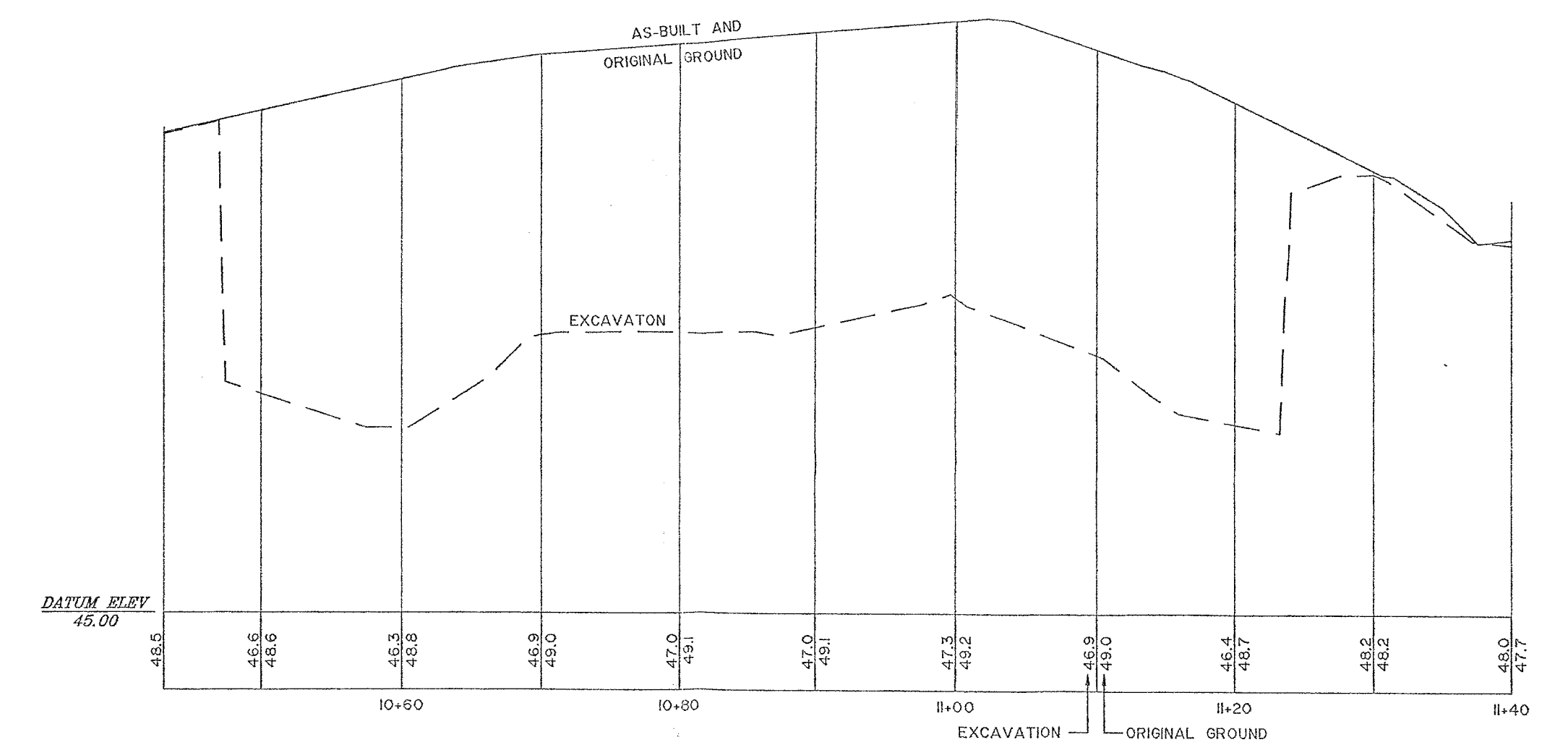
104 LOUISE DRIVE  
EXCAVATION CROSS SECTION 'A'  
SCALE: Horiz. 1" = 10'  
Vert. 1" = 1'



104 LOUISE DRIVE  
EXCAVATION CROSS SECTION 'C'  
SCALE: Horiz. 1" = 10'  
Vert. 1" = 1'

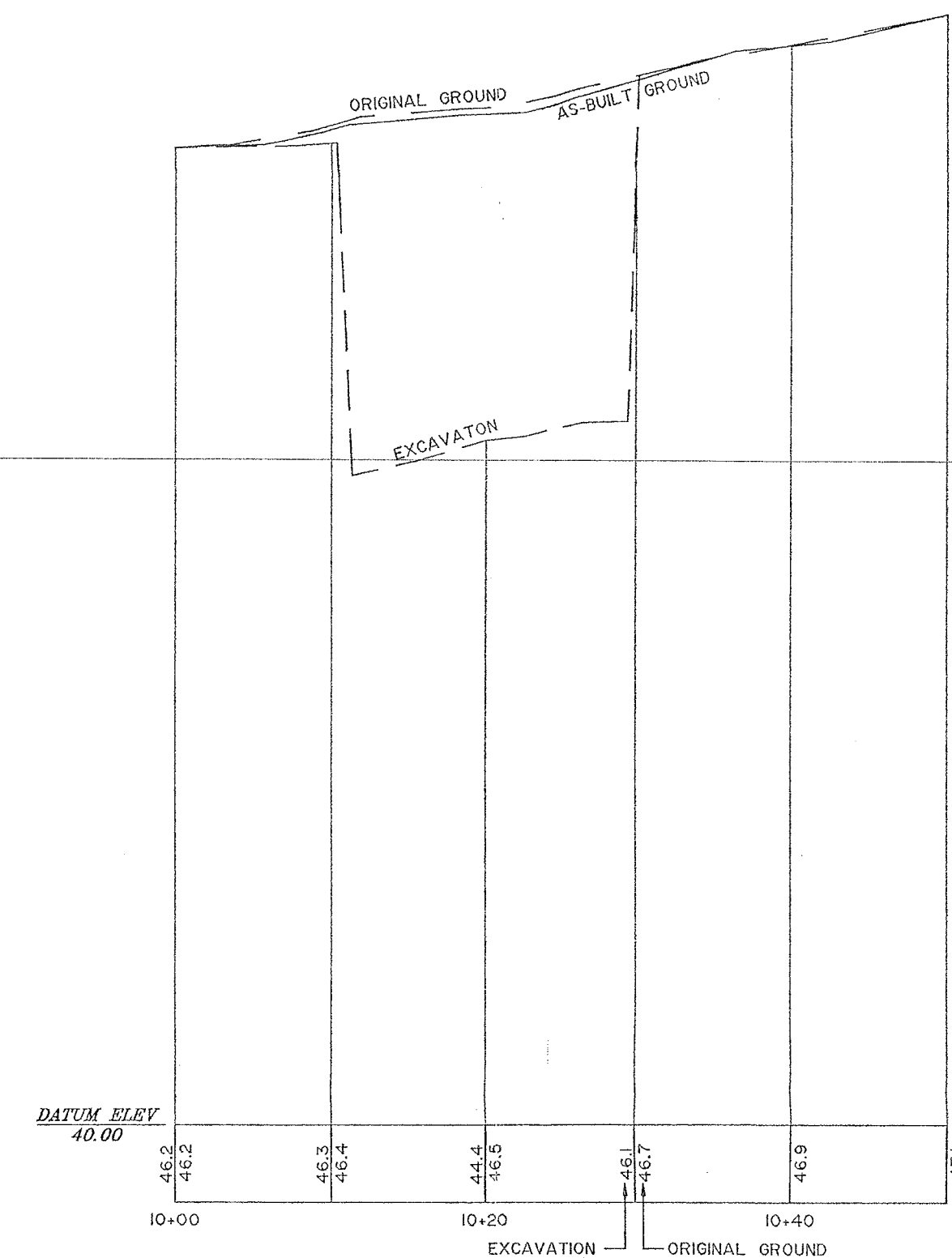
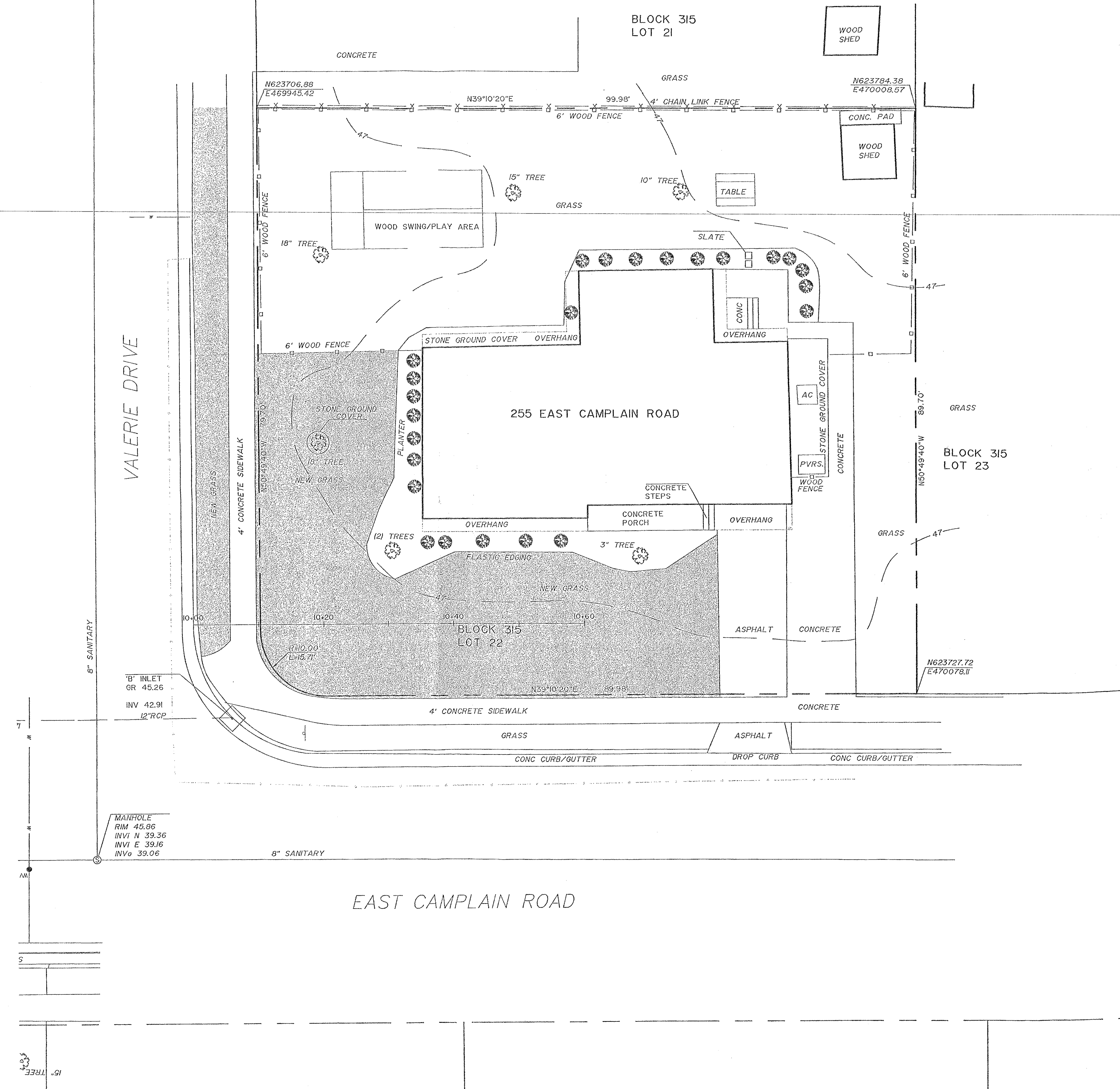
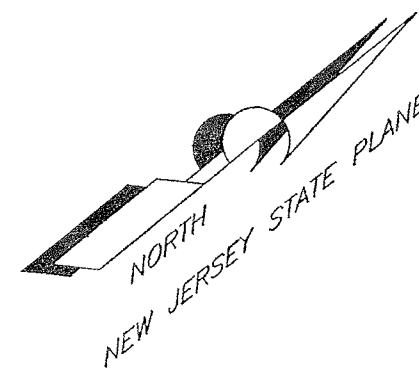


104 LOUISE DRIVE  
EXCAVATION CROSS SECTION 'B'  
SCALE: Horiz. 1" = 10'  
Vert. 1" = 1'



104 LOUISE DRIVE  
EXCAVATION CROSS SECTION 'D'  
SCALE: Horiz. 1" = 10'  
Vert. 1" = 1'





255 E. CAMPLAIN ROAD  
EXCAVATION CROSS SECTION  
SCALE: Horiz. 1" = 10'  
Vert. 1" = 1'

#### LEGEND

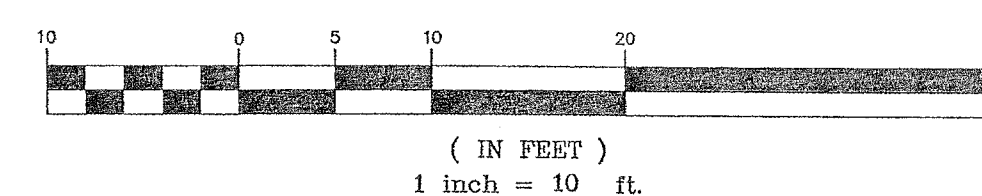
---	FINAL RESTORATION CONTOURS
---	PROPERTY LINES
---	CURB LINE
X-X	CHAIN LINK/WIRE FENCES
---	WOOD FENCES
---	OVERHEAD ELECTRIC WIRES
---	UNDERGROUND WATER LINE
---	UNDERGROUND GAS LINE
---	HEDGE ROW
---	WATER VALVE
---	GAS VALVE
---	FIRE HYDRANT
---	BUSH/SHRUB
---	TREE

NOTE: NOT ALL FEATURES IN THE LEGEND MAY APPEAR ON THIS MAP.

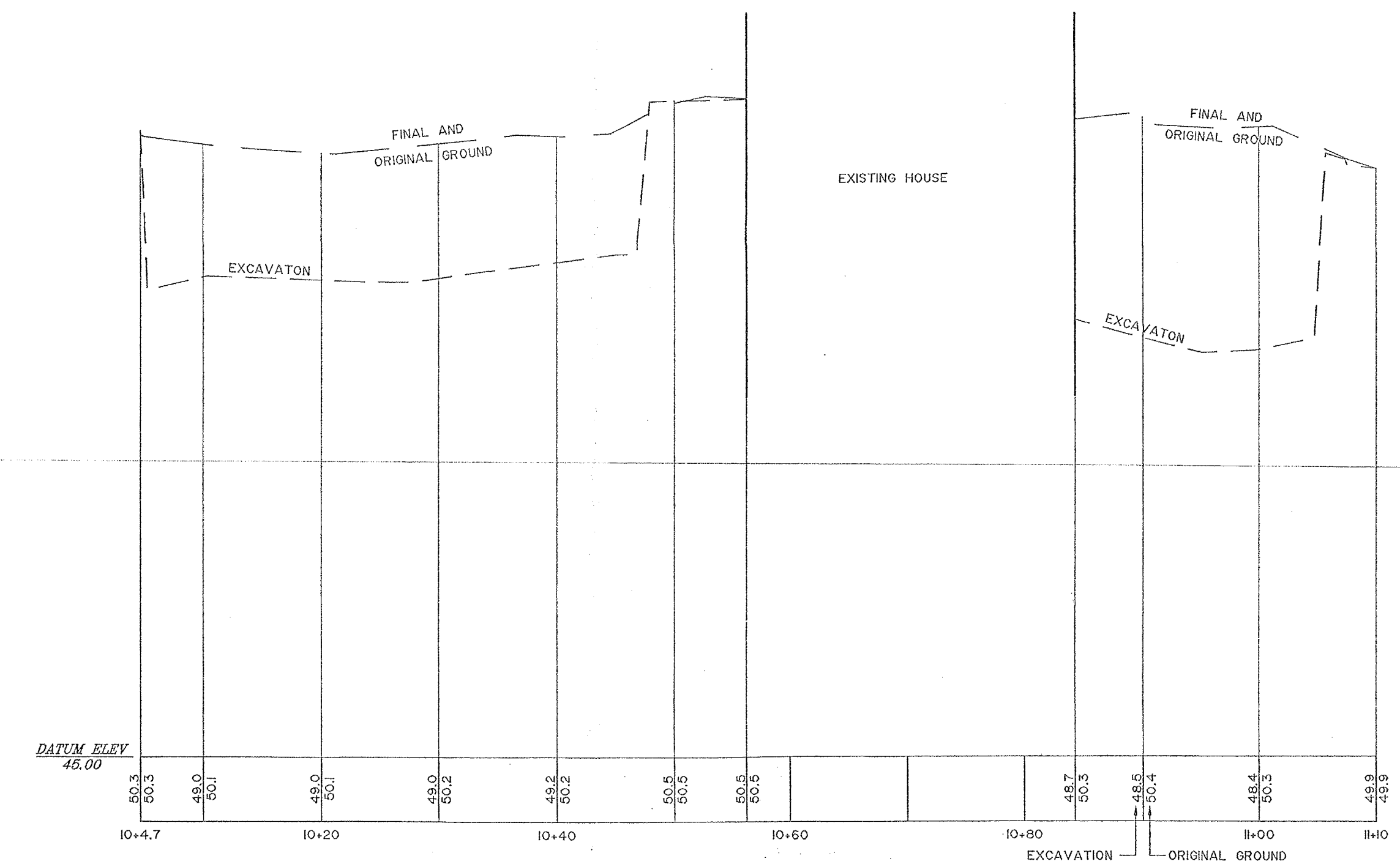
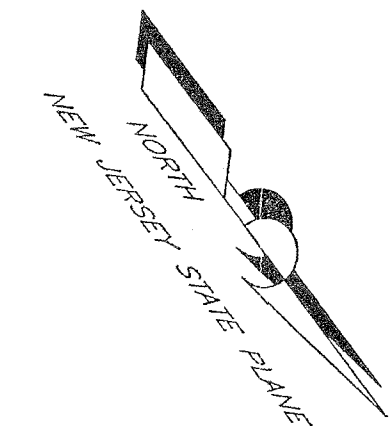
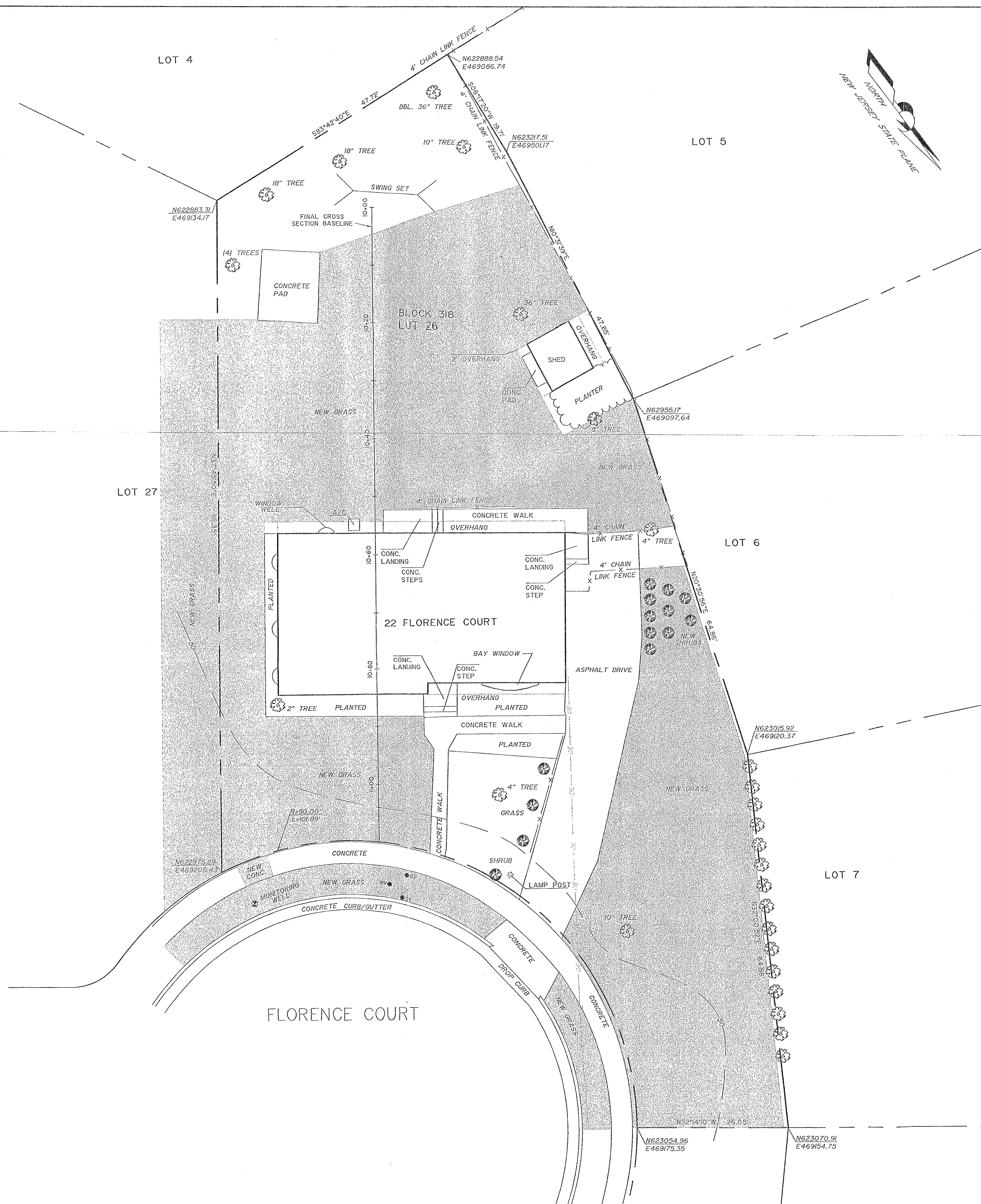
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#### GRAPHIC SCALE





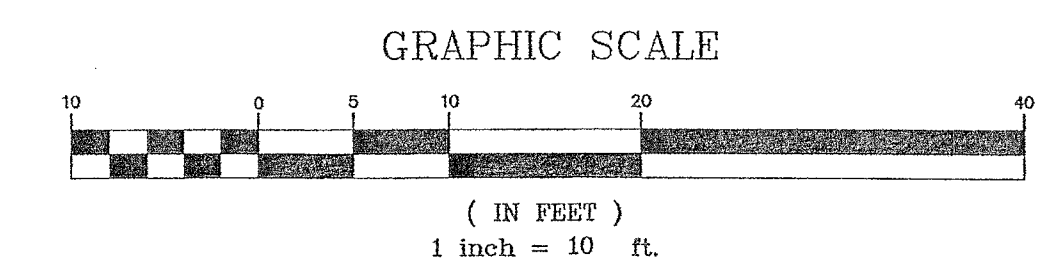


22 FLORENCE COURT  
EXCAVATION CROSS SECTION  
SCALE: Horiz. 1" = 10'  
Vert. 1" = 1'

- LEGEND**
- 38— FINAL RESTORATION CONTOURS
  - — — — — PROPERTY LINES
  - — — — — CURB LINE
  - X — X — CHAIN LINK/WIRE FENCES
  - □ — WOOD FENCES
  - — — — — OVERHEAD ELECTRIC WIRES
  - — — — — UNDERGROUND WATER LINE
  - — — — — UNDERGROUND GAS LINE
  - — — — — HEDGE ROW
  - W WATER VALVE
  - G GAS VALVE
  - F FIRE HYDRANT
  - B BUSH/SHRUB
  - T TREE

NOTE: NOT ALL FEATURES IN THE LEGEND MAY APPEAR ON THIS MAP.

- NOTES**
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  2. SHADING REPRESENTS LIMIT OF DISTURBANCE/RESTORATION.
  3. PHYSICAL FEATURES SHOWN HEREON REPRESENT PRE CONSTRUCTION CONDITION UNLESS SPECIFICALLY NOTED AS NEW.





## Confirmation Sample results for 158 East Camplain Road

### BOTTOM SAMPLES

COMPOUND	ACG CRITERIA	UNITS	1	2	3	4
			SBS-158CAM-01	158CAM-D037B	158CAM-S3002B	SBS-160CAM-07
			40.7 - 41.7 ft. MSL 0.5 - 1.5 ft. BGS	39.4 - 41.4 ft. MSL 2 - 4 ft. BGS	39.5 - 40 ft. MSL 2 - 2.5 ft. BGS	45.5 - 48 ft. MSL 1.5 - 2 ft. BGS
Benzo(a)anthracene	900	ug/kg	270 J	380 U	370 U	160 J
Benzo(b)fluoranthene	900	ug/kg	380 J	380 U	370 U	340 J
Benzo(k)fluoranthene	9000	ug/kg	140 J	380 U	370 U	150 J
Benzo(a)pyrene	660	ug/kg	250 J	380 U	370 U	160 J
Chrysene	90000	ug/kg	340 J	380 U	370 U	180 J
Dibenz(a,h)anthracene	660	ug/kg	400 U	380 U	370 U	54 J
Indeno(1,2,3-cd)pyrene	900	ug/kg	160 J	380 U	370 U	160 J

### SIDEWALL SAMPLES

COMPOUND	ACG CRITERIA	UNITS	1	2	3	4	5	6
			158CAM-S3000A	158CAM-067	158CAM-071	158CAM-079	FCS-OU2-0098-160ECAMP-W3-46.0-7	FCS-OU2-0099-160ECAMP-W4-46.0-7
			42.4 - 43.9 ft. MSL 0.5 - 2 ft. BGS	42.1 - 42.3 ft. MSL 0 - 0.25 ft. BGS	41.1 - 41.4 ft. MSL 0 - 0.25 ft. BGS	40.9 - 41.2 ft. MSL 0 - 0.25 ft. BGS	46.0 ft. MSL 1 ft BGS	46.0 ft. MSL 1 ft BGS
Benzo(a)anthracene	900	ug/kg	42 J	64 J	180 J	260 J	103	525
Benzo(b)fluoranthene	900	ug/kg	59 J	150 J	250 J	400 J	116	761
Benzo(k)fluoranthene	9000	ug/kg	370 U	420 UJ	420 U	440 UJ	85	730
Benzo(a)pyrene	660	ug/kg	38 J	77 J	150 J	220 J	82	580
Chrysene	90000	ug/kg	57 J	91 J	170 J	270 J	96	658
Dibenz(a,h)anthracene	660	ug/kg	370 U	420 U	420 U	440 U	330 U	159
Indeno(1,2,3-cd)pyrene	900	ug/kg	370 U	45 J	81 J	120 J	330 U	299

\*NOTE: All data has been validated

Qualifiers:

ND - No Data

U - Non Detect

J - Estimated Value

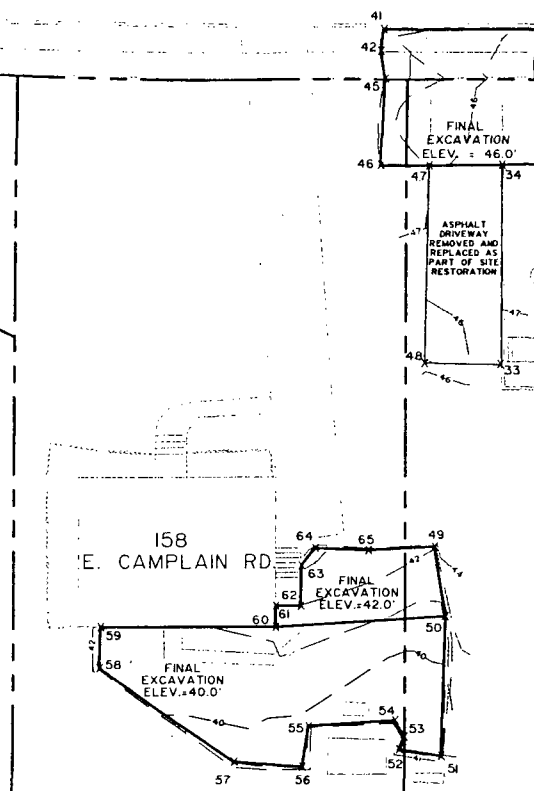
D - Diluted Sample Results

500869

# EAST CAMPLAIN ROAD



FINAL EXCAVATION COORDINATES 158 E. CAMPLAIN ROAD			
41	N 622757.8 E 469342.1	55	N 622677.8 E 469421.7
42	N 622755.3 E 469344.4	56	N 622672.8 E 469426.2
45	N 622753 E 469348.3	57	N 622664.7 E 469418.5
46	N 622743.8 E 469358.7	58	N 622657.3 E 469392.7
47	N 622749.9 E 469363.7	59	N 622661.7 E 469387.6
48	N 622730.2 E 469387.5	60	N 622683.8 E 469405.7
49	N 622711.8 E 469412	61	N 622686 E 469403.1
50	N 622706.1 E 469421.9	62	N 622689.1 E 469405.7
51	N 622691.3 E 469439	63	N 622693.3 E 469400.6
52	N 622686.7 E 469433.9	64	N 622696.8 E 469399.9
53	N 622688.7 E 469432.8	65	N 622703.3 E 469405.7
54	N 622689.2 E 469429.8		



## LEGEND

---	FINAL EXCAVATION CONTOURS
---	PROPERTY LINES
---	CURB LINE

NOTE: BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

## GRAPHIC SCALE



( IN FEET )  
1 inch = 20 ft.



US Army Corps  
of Engineers

**FINAL EXCAVATION LIMITS**  
158 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.

500870



## Confirmation Sample results for 160 East Camplain Road

### BOTTOM SAMPLES

COMPOUND	ACG CRITERIA	UNITS	1	2	3	4	5
			SBS-160CAM-07	158CAM-D037B	158CAM-S3002B	166CAM-S1050A	166CAM-S3004C
			45.5 - 46 ft. MSL	39.4 - 41.4 ft. MSL	39.5 - 40 ft. MSL	39.7 - 41.7 ft. MSL	41.2 - 41.7 ft. MSL
Benzo(a)anthracene	900	ug/kg	1.5 - 2 ft. BGS	2 - 4 ft. BGS	2 - 2.5 ft. BGS	4 - 6 ft. BGS	4 - 4.5 ft. BGS
			160 J	380 U	370 U	390 U	370 J
			340 J	380 U	370 U	390 U	690
Benzo(b)fluoranthene	900	ug/kg	150 J	380 U	370 U	390 U	300 J
			160 J	380 U	370 U	390 U	340 J
			180 J	380 U	370 U	390 U	470
Benzo(k)fluoranthene	9000	ug/kg	54 J	380 U	370 U	390 U	39 J
			160 J	380 U	370 U	390 U	130 J

### SIDEWALL SAMPLES

COMPOUND	ACG CRITERIA	UNITS	1	2	3	4	5
			SSS-160CAM-04	160CAM-011	FCS-OU2-0095-160ECAMP-W1-46.0-7	FCS-OU2-0097-160ECAMP-W2-46.0-7	FCS-OU2-0098-160ECAMP-W3-46.0-7
			46.9 - 47.4 ft. MSL	46.7 - 47 ft. MSL	46.0 ft. MSL	46.0 ft. MSL	46.0 ft. MSL
Benzo(a)anthracene	900	ug/kg	0 - 0.5 ft. BGS	0 - 0.25 ft. BGS	1 ft BGS	1 ft BGS	1 ft BGS
			230 J	130 J	330 U	330 U	103
			410	230 J	330 U	330 U	116
Benzo(b)fluoranthene	900	ug/kg	190 J	390 UJ	330 U	330 U	85
			200 J	110 J	330 U	330 U	82
			370 J	130 J	330 U	330 U	96
Benzo(k)fluoranthene	9000	ug/kg	380 U	390 U	330 U	330 U	330 U
			73 J	73 J	330 U	330 U	330 U

### SIDEWALL SAMPLES

COMPOUND	ACG CRITERIA	UNITS	6	7	8	9	10
			FCS-OU2-0099-160ECAMP-W4-46.0-7	166CAM-S3003A	FCS-OU2-0003-166ECAMP-SW-43.0-7A	160CAM-S3001A	158CAM-S3000A
			46.0 ft. MSL	39.3 - 41.3 ft. MSL	43.0 ft. MSL	40.7 - 42.2 ft. MSL	42.4 - 43.9 ft. MSL
Benzo(a)anthracene	900	ug/kg	1 ft BGS	2 - 4 ft. BGS	2.5 ft BGS	0.5 - 2 ft. BGS	0.5 - 2 ft. BGS
			525	160 J	75.3 J	260 J	42 J
			761	360 J	169 J	400	59 J
Benzo(b)fluoranthene	900	ug/kg	730	140 J	77.1 J	440 J	370 U
			580	140 J	73.5 J	220 J	38 J
			659	270 J	107 J	270 J	57 J
Benzo(k)fluoranthene	9000	ug/kg	159	370 U	330 U	440 J	370 U
			299	120 J	330 U	120 J	370 U

\*NOTE: All data has been validated

Qualifiers:

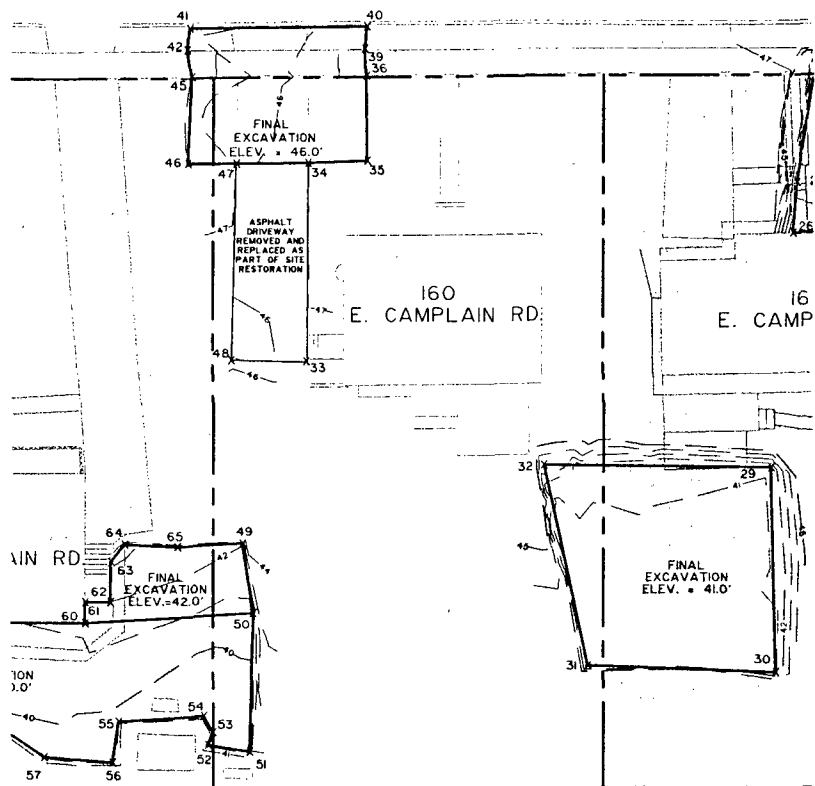
ND - No Data

U - Non Detect

J - Estimated Value

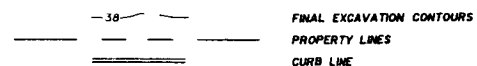
D - Diluted Sample Results

EAST CAMPLAIN ROAD



FINAL EXCAVATION COORDINATES 160 E. CAMPLAIN ROAD			
29	N 622786.3 E 469457.1	45	N 622753 E 469348.3
30	N 622765.9 E 469483.4	46	N 622743.8 E 469358.7
31	N 622743.1 E 469463.2	47	N 622749.9 E 469363.7
32	N 622758.0 E 469433.4	49	N 622711.8 E 469412
34	N 622758.5 E 469373.7	50	N 622706.1 E 469421.9
35	N 622766.8 E 469377	51	N 622691.3 E 469439
36	N 622775.3 E 469366.3	52	N 622686.7 E 469433.9
39	N 622777.8 E 469362.8	53	N 622688.7 E 469432.8
40	N 622780.3 E 469360.3	54	N 622689.2 E 469429.8
41	N 622757.8 E 469342.1	65	N 622703.3 E 469405.7
42	N 622755.3 E 469344.4		

LEGEND



NOTE: BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

GRAPHIC SCALE



( IN FEET )  
1 inch = 20 ft.



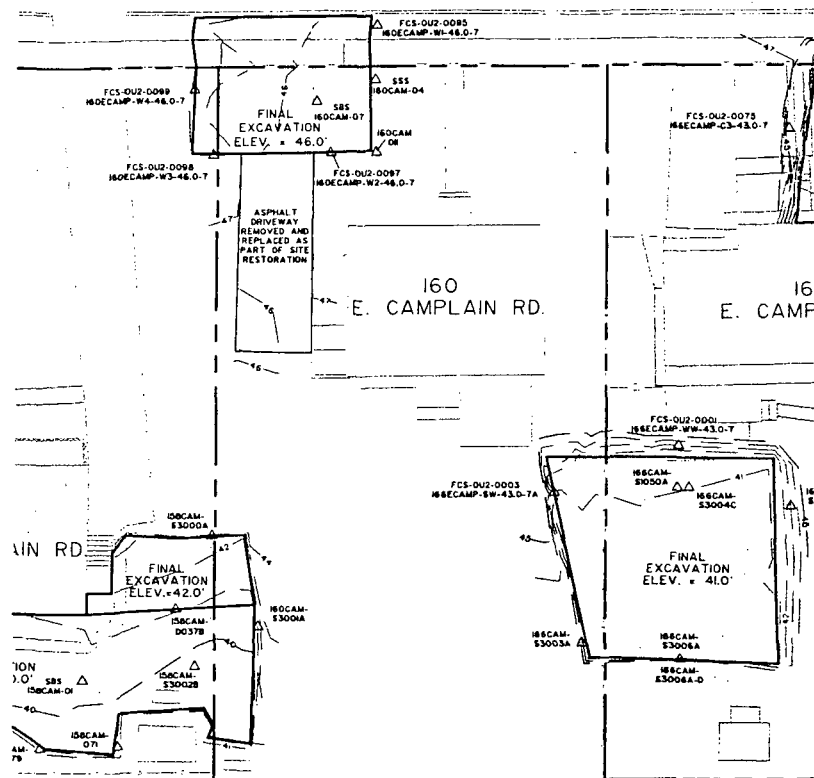
US Army Corps  
of Engineers

**FINAL EXCAVATION LIMITS**  
160 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.  
9-24-02

500873



E. CAMPLAIN ROAD



**LEGEND**

- 36— FINAL EXCAVATION CONTOURS
- — — — — PROPERTY LINES
- ===== CURB LINE
- XXXX Δ CONFIRMATION SAMPLE

**NOTES**

1. BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

**GRAPHIC SCALE**



( IN FEET )  
1 inch = 20 ft



US Army Corps  
of Engineers

**CONFIRMATION SAMPLE LOCATIONS**

160 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.

8-24-02

500874

## Confirmation Sample results for 166 East Camplain Road - Front and Side Yard Excavation

### BOTTOM SAMPLES

COMPOUND	ACG CRITERIA	UNITS	1	2	3
			FCS-OU2-0069-166ECAMP-AF-42.0-7	FCS-OU2-0074-166ECAMP-CF-41.0-7	FCS-OU2-0077-166ECAMP-BF-41.0-7
			42.0 ft. MSL	41.0 ft. MSL	41.0 ft. MSL
			5 ft BGS	6 ft BGS	6 ft BGS
Benzo(a)anthracene	900	ug/kg	468	330 U	222 J
Benzo(b)fluoranthene	900	ug/kg	455	330 U	147 J
Benzo(k)fluoranthene	9000	ug/kg	360	330 U	215 J
Benzo(a)pyrene	660	ug/kg	354	330 U	184 J
Chrysene	90000	ug/kg	592	330 U	260 J
Dibenz(a,h)anthracene	660	ug/kg	98 J	330 U	330 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	205 J	330 U	98 J

### SIDEWALL SAMPLES

COMPOUND	ACG CRITERIA	UNITS	1	2	3
			FCS-OU2-0075-166ECAMP-C3-43.0-7	FCS-OU2-0070-166ECAMP-A3-44.0-7	FCS-OU2-0072-166ECAMP-A2-44.0-7
			43.0 ft. MSL	44.0 ft. MSL	44.0 ft. MSL
			4 ft BGS	2.5 ft BGS	2.5 ft BGS
Benzo(a)anthracene	900	ug/kg	330 U	330 U	192 J
Benzo(b)fluoranthene	900	ug/kg	330 U	330 U	122 J
Benzo(k)fluoranthene	9000	ug/kg	330 U	330 U	122 J
Benzo(a)pyrene	660	ug/kg	330 U	330 U	116 J
Chrysene	90000	ug/kg	330 U	330 U	201 J
Dibenz(a,h)anthracene	660	ug/kg	330 U	330 U	330 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	330 U	330 U	330 U

\*NOTE: All data has been validated

Qualifiers:

ND - No Data

U - Non Detect

J - Estimated Value

D - Diluted Sample Results

500875

## Confirmation Sample results for 166 East Camplain Road - Back Yard Excavation

### BOTTOM SAMPLES

COMPOUND	ACG CRITERIA	UNITS	1	2
			166CAM-S1050A	166CAM-S3004C
			39.7 - 41.7 ft. MSL	41.2 - 41.7 ft. MSL
			4 - 6 ft. BGS	4 - 4.5 ft. BGS
Benzo(a)anthracene	900	ug/kg	390 U	370 J
Benzo(b)fluoranthene	900	ug/kg	390 U	690
Benzo(k)fluoranthene	9000	ug/kg	390 U	300 J
Benzo(a)pyrene	660	ug/kg	390 U	340 J
Chrysene	90000	ug/kg	390 U	470
Dibenz(a,h)anthracene	660	ug/kg	390 U	39 J
Indeno(1,2,3-cd)pyrene	900	ug/kg	390 U	130 J

### SIDEWALL SAMPLES

COMPOUND	ACG CRITERIA	UNITS	1	2	3		4	5
			166CAM-S3003A	166CAM-S3005A	166CAM-S3006A	166CAM-S3006A-D	FCS-OU2-0001-166ECAMP-WW-43.0-7	FCS-OU2-0003-166ECAMP-SW-43.0-7A
			39.3 - 41.3 ft. MSL	41.8 - 43.8 ft. MSL	39.4 - 41.4 ft. MSL	39.4 - 41.4 ft. MSL	43.0 ft. MSL	43.0 ft. MSL
			2 - 4 ft. BGS	2 - 4 ft. BGS	2 - 4 ft. BGS	2 - 4 ft. BGS	3 ft. BGS	2.5 ft. BGS
Benzo(a)anthracene	900	ug/kg	160 J	250 J	51 J	41 J	211 J	75.3 J
Benzo(b)fluoranthene	900	ug/kg	360 J	390	89 J	100 J	485	169 J
Benzo(k)fluoranthene	9000	ug/kg	140 J	180 J	54 J	40 J	278 J	77.1 J
Benzo(a)pyrene	660	ug/kg	140 J	220 J	370 U	40 J	254 J	73.5 J
Chrysene	90000	ug/kg	270 J	290 J	150 J	55 J	349	107 J
Dibenz(a,h)anthracene	660	ug/kg	370 U	370 U	370 U	380 U	91 J	330 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	120 J	86 J	370 U	380 U	180 J	330 U

\*NOTE: All data has been validated

Qualifiers:

ND - No Data

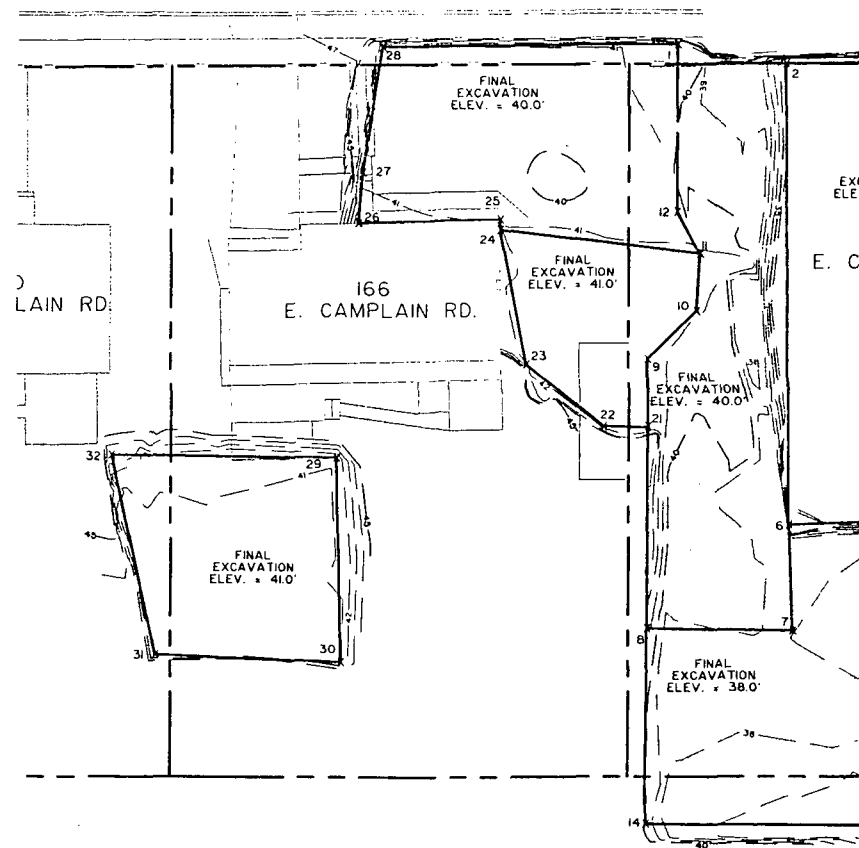
U - Non Detect

J - Estimated Value

D - Diluted Sample Results

500876

EAST CAMPLAIN ROAD



FINAL EXCAVATION COORDINATES 166 E. CAMPLAIN ROAD			
1	N 622871.5 E 469440.9	22	N 622823.3 E 469480.9
2	N 622883 E 469454.3	23	N 622820 E 469465.3
6	N 622836.5 E 46952.3	24	N 622830.4 E 469445.6
7	N 622826.2 E 469526	25	N 622831.4 E 469444.4
8	N 622808.2 E 46950.8	26	N 622813 E 469430
9	N 622833.8 E 469476.2	27	N 622818.6 E 469424.1
10	N 622846.8 E 469476.1	28	N 622833.8 E 469410.6
11	N 622853 E 469469.2	29	N 622786.3 E 469457.1
12	N 622854.5 E 469461.7	30	N 622765.9 E 469483.4
14	N 622786.9 E 469534.3	31	N 622743.1 E 469463.2
21	N 622828.8 E 469485.6	32	N 622758.0 E 469433.4

#### LEGEND



NOTE: BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

#### GRAPHIC SCALE



( IN FEET )  
1 inch = 20 ft.

SEPA

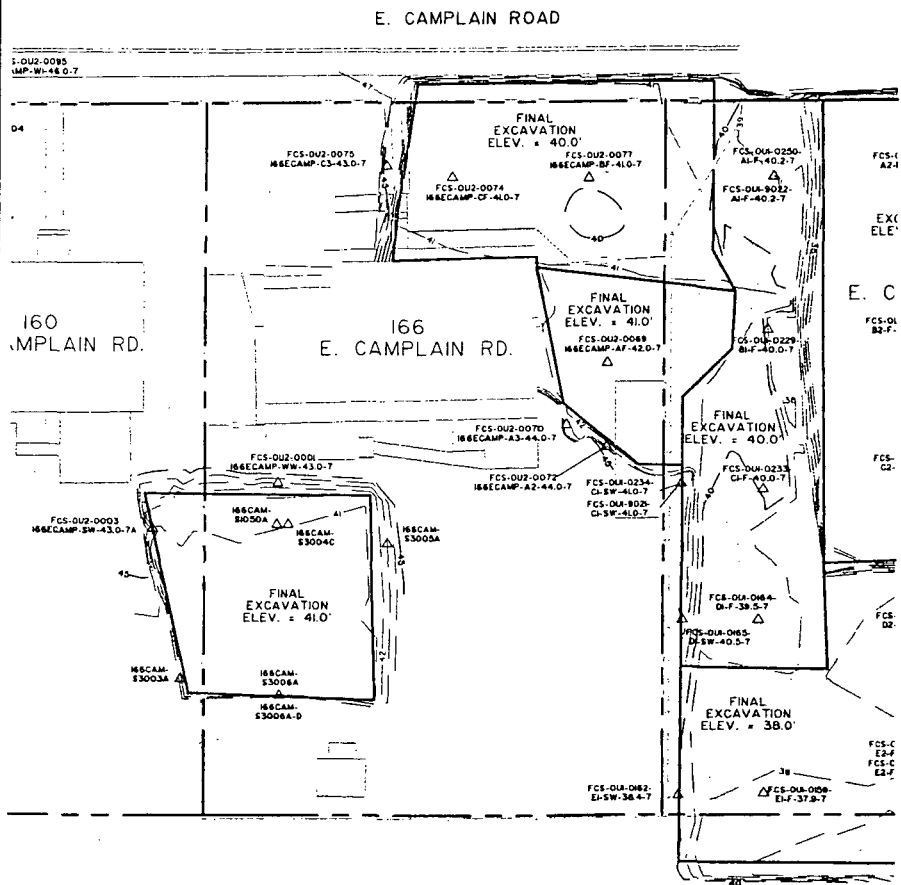


US Army Corps  
of Engineers

#### FINAL EXCAVATION LIMITS

166 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.

500877



**LEGEND**

- FINAL EXCAVATION CONTOURS
- PROPERTY LINES
- CURB LINE
- CONFIRMATION SAMPLE

**NOTES**

1. BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

**GRAPHIC SCALE**



( IN FEET )  
1 inch = 20 ft



US Army Corps  
of Engineers

**CONFIRMATION SAMPLE LOCATIONS**

166 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.  
9-24-03

500878

# Confirmation Sample results for 189 East Camplain Road

## BOTTOM SAMPLES

COMPOUND	ACG CRITERIA	UNITS	1	2		3
			SBS-189CAM-06	SBS-189CAM-07	SBS-189CAM-07-D	SBS-189CAM-08
			44.7 - 45.7 ft. MSL	45 - 46 ft. MSL	45 - 46 ft. MSL	44.5 - 45 ft. MSL
			0.5 - 1.5 ft. BGS	0.5 - 1.5 ft. BGS	0.5 - 1.5 ft. BGS	1 - 1.5 ft. BGS
Benzo(a)anthracene	900	ug/kg	170 J	180 J	370 U	340 U
Benzo(b)fluoranthene	900	ug/kg	200 J	310 J	370 U	38 J
Benzo(k)fluoranthene	9000	ug/kg	93 J	98 J	370 U	340 U
Benzo(a)pyrene	660	ug/kg	200 J	200 J	370 U	340 U
Chrysene	90000	ug/kg	180 J	230 J	370 U	340 U
Dibenz(a,h)anthracene	660	ug/kg	380 U	380 U	370 U	340 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	230 J	160 J	370 U	340 U

## SIDEWALL SAMPLES

COMPOUND	ACG CRITERIA	UNITS	1	2	3
			189CAM-010	SSS-189CAM-03	SSS-189CAM-04
			46.3 - 46.5 ft. MSL	44.5 - 45 ft. MSL	46.3 - 46.8 ft. MSL
			0 - 0.25 ft. BGS	0 - 0.5 ft. BGS	0 - 0.5 ft. BGS
Benzo(a)anthracene	900	ug/kg	280 J	370 J	490
Benzo(b)fluoranthene	900	ug/kg	280 J	680	690
Benzo(k)fluoranthene	9000	ug/kg	330 J	210 J	240 J
Benzo(a)pyrene	660	ug/kg	240 J	380 J	470
Chrysene	90000	ug/kg	290 J	460	600
Dibenz(a,h)anthracene	660	ug/kg	55 J	390 U	400 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	140 J	300 J	330 J

\*NOTE: All data has been validated

Qualifiers:

ND - No Data

U - Non Detect

J - Estimated Value

D - Diluted Sample Results

189 East Camplain Road



FINAL EXCAVATION COORDINATES 189 E. CAMPLAIN ROAD			
1	N 623041.7 E 469532.7	14	N 623062.9 E 469554.4
2	N 623045.2 E 469528.6	15	N 623065.4 E 469544.5
3	N 623053.9 E 469533.8	16	N 623073.3 E 469527.6
4	N 623059.7 E 469540.5	17	N 623074.1 E 469524.4
5	N 623056.6 E 469542.1	18	N 623063 E 469536.9
6	N 623045.7 E 469520.6	19	N 623080.3 E 469557.5
7	N 623053.9 E 469504.7	20	N 623096.5 E 469532.8
8	N 623060.3 E 469506.7	21	N 623091.2 E 469527.4
9	N 623062.9 E 469508.8	22	N 623097.5 E 469519.5
10	N 623061.3 E 469510.8	23	N 623099.9 E 469519.8
11	N 623060.7 E 469513.6	24	N 62305.8 E 469526.0
12	N 623049.6 E 469526.0	25	N 623099.7 E 469536.1
13	N 623054.7 E 469527.9		

#### LEGEND

---	FINAL EXCAVATION CONTOURS
---	PROPERTY LINES
---	CURB LINE

NOTE: BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

#### GRAPHIC SCALE



( IN FEET )  
1 inch = 20 ft.



US Army Corps  
of Engineers

#### FINAL EXCAVATION LIMITS

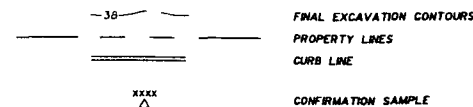
189 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.

9-24-02

500880



# LEGEND



# NOTES

1. BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

# GRAPHIC SCALE



( IN FEET )  
1 inch = 20 ft.

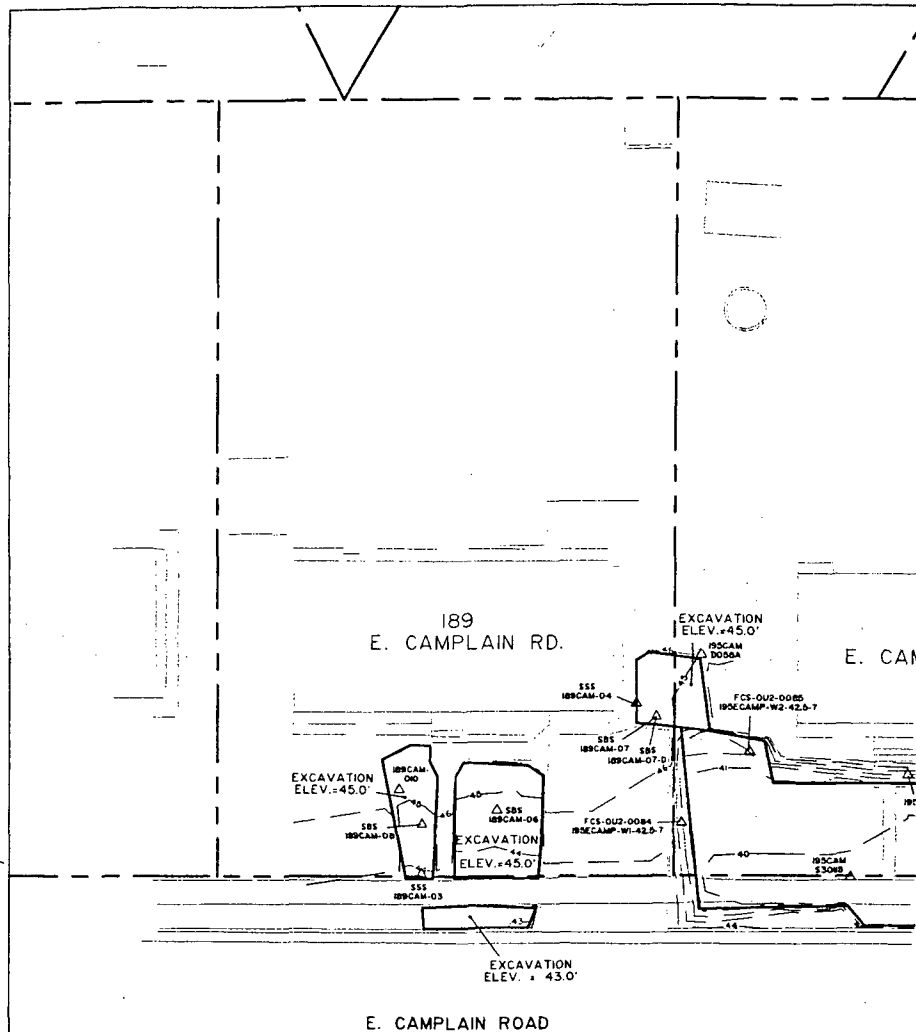
500881



US Army Corps  
of Engineers

# CONFIRMATION SAMPLE LOCATIONS

189 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.  
6-24-02





# Confirmation Sample results for 195 East Camplain Road - Front Yard Excavation

## BOTTOM SAMPLES

COMPOUND	ACG CRITERIA	UNITS	1	2
			195CAM-S3011B	201CAM-S3006B
			40 - 40.5 ft. MSL	39.5 - 40 ft. MSL
			4 - 4.5 ft. BGS	4 - 4.5 ft. BGS
Benzo(a)anthracene	900	ug/kg	470	41 J
Benzo(b)fluoranthene	900	ug/kg	740	63 J
Benzo(k)fluoranthene	9000	ug/kg	340 J	360 U
Benzo(a)pyrene	660	ug/kg	500	360 U
Chrysene	90000	ug/kg	530	46 J
Dibenz(a,h)anthracene	660	ug/kg	96 J	360 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	350 J	360 U

## SIDEWALL SAMPLES

COMPOUND	ACG CRITERIA	UNITS	1	2	3	4	5	6
			FCS-OU2-0084-195ECAMP-W1-42.5-7	FCS-OU2-0085-195ECAMP-W2-42.5-7	FCS-OU2-0086-195ECAMP-W3-42.5-7	FCS-OU2-0087-195ECAMP-W4-42.5-7	FCS-OU2-0088-195ECAMP-W5-42.5-7	195CAM-D058A
			42.5 ft. MSL	42.5 ft. MSL	42.5 ft. MSL	42.5 ft. MSL	42.5 ft. MSL	44 - 45.5 ft. MSL
			2.5 ft BGS	3.5 ft BGS	3.5 ft BGS	3.5 ft BGS	3.5 ft BGS	0.5 - 2 ft. BGS
Benzo(a)anthracene	900	ug/kg	330 U	330 U	105 J	330 U	330 U	41 U
Benzo(b)fluoranthene	900	ug/kg	330 U	330 U	131 J	330 U	330 U	63 U
Benzo(k)fluoranthene	9000	ug/kg	330 U	330 U	109 J	330 U	330 U	360 U
Benzo(a)pyrene	660	ug/kg	330 U	330 U	89 J	330 U	330 U	360 U
Chrysene	90000	ug/kg	330 U	330 U	128 J	330 U	330 U	46 U
Dibenz(a,h)anthracene	660	ug/kg	330 U	330 U	330 U	330 U	330 U	360 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	330 U	330 U	330 U	330 U	330 U	360 U

\*NOTE: All data has been validated

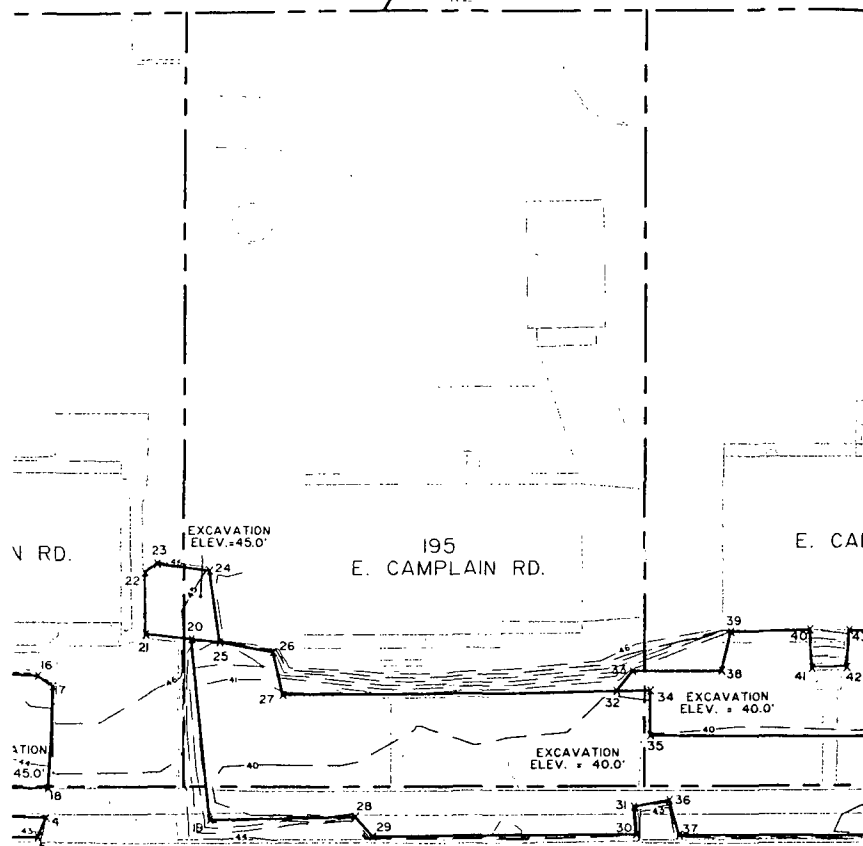
Qualifiers:

ND - No Data

U - Non Detect

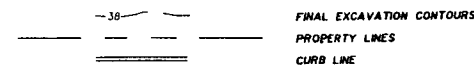
J - Estimated Value

D - Diluted Sample Results



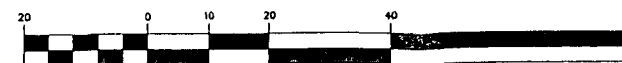
FINAL EXCAVATION COORDINATES 195 E. CAMPLAIN ROAD			
19	N 623080.3 E 469557.5	29	N 623099.3 E 469576.5
20	N 623096.5 E 469532.8	30	N 623132.6 E 469603.3
21	N 623091.2 E 469527.4	31	N 623135.1 E 469599.6
22	N 623097.5 E 469519.5	32	N 623144.8 E 469583.2
23	N 623099.9 E 469519.8	33	N 623148.4 E 469580.9
24	N 623105.8 E 469526.0	34	N 623149.1 E 469586.5
25	N 623099.7 E 469536.1	35	N 623144.4 E 469582.2
26	N 623105.5 E 469542.8	36	N 623140.2 E 469502.3
27	N 623102.3 E 469549.1	37	N 623137.9 E 469607.7
28	N 623099.1 E 469572.2	38	N 623160 E 469591.3

#### LEGEND



NOTE: BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

#### GRAPHIC SCALE



( IN FEET )  
1 inch = 20 ft.



US Army Corps  
of Engineers

#### FINAL EXCAVATION LIMITS

195 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.

500883



## Confirmation Sample Results for 201 East Camplain Road

### BOTTOM SAMPLES

COMPOUND	CLEANUP GOALS	UNITS	1	2	3
			201CAM-S3009B	201CAM-S3086B	FCS-OU2-0091-201ECAMP-AF-40.5-7
			39.4 - 39.9 ft. MSL	39.5 - 40 ft. MSL	40.5 ft. MSL
			4 - 4.5 ft. BGS	4 - 4.5 ft. BGS	5.5 ft BGS
Benzo(a)anthracene	900	ug/kg	230 J	41 J	330 U
Benzo(b)fluoranthene	900	ug/kg	460	63 J	330 U
Benzo(k)fluoranthene	9000	ug/kg	150 J	360 U	330 U
Benzo(a)pyrene	660	ug/kg	230 J	360 U	330 U
Chrysene	90000	ug/kg	370 J	46 J	330 U
Dibenz(a,h)anthracene	660	ug/kg	44 J	360 U	330 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	180 J	360 U	330 U

### SIDEWALL SAMPLES

COMPOUND	CLEANUP GOALS	UNITS	1	2	3	4
			FCS-OU2-0089-201ECAMP-W1-43.0-7	FCS-OU2-0092-201ECAMP-W2-43.0-7	FCS-OU2-0093-201ECAMP-W3-43.0-7	FCS-OU2-0105-201ECAMP-W4-42.5-7
			43.0 ft. MSL	43.0 ft. MSL	43.0 ft. MSL	42.5 ft. MSL
			3 ft BGS	3 ft BGS	3 ft BGS	1.5 ft BGS
Benzo(a)anthracene	900	ug/kg	330 U	330 U	185 J	223
Benzo(b)fluoranthene	900	ug/kg	330 U	330 U	291 J	275
Benzo(k)fluoranthene	9000	ug/kg	330 U	330 U	158 J	279
Benzo(a)pyrene	660	ug/kg	330 U	330 U	165 J	235
Chrysene	90000	ug/kg	330 U	330 U	214 J	256
Dibenz(a,h)anthracene	660	ug/kg	330 U	330 U	330 U	88
Indeno(1,2,3-cd)pyrene	900	ug/kg	330 U	330 U	90 J	147

\*NOTE - All data has been validated

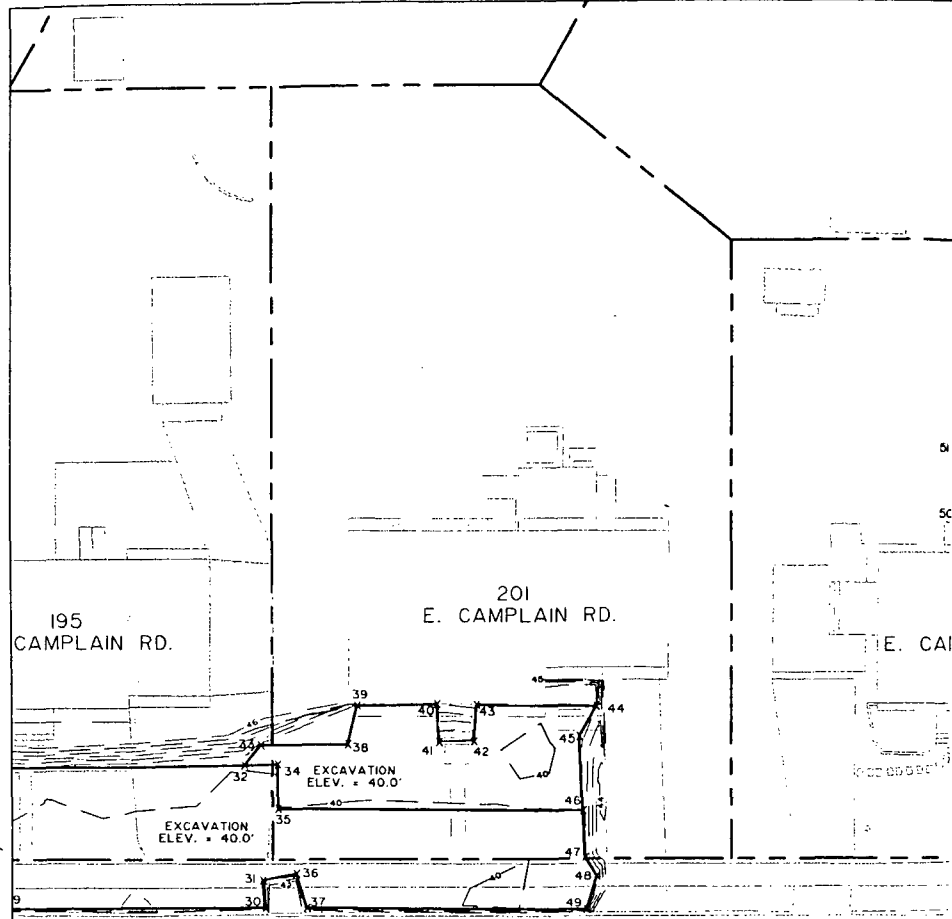
Qualifiers:

ND - No Data

U - Non Detect

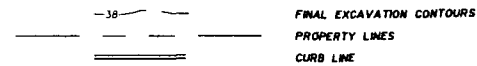
J - Estimated Value

D - Diluted Sample Results



FINAL EXCAVATION COORDINATES 201 E. CAMPLAIN ROAD			
30	N 623132.6 E 469603.3	40	N 623175.4 E 469595.5
31	N 623135.1 E 469599.6	41	N 623171.8 E 469600.5
32	N 623144.8 E 469583.2	42	N 623176.2 E 469604
33	N 623148.4 E 469580.9	43	N 623180.3 E 469599.6
34	N 623149.1 E 469586.5	44	N 623197.8 E 469612.4
35	N 623144.4 E 469592.2	45	N 623188.7 E 469613.7
36	N 623140.2 E 469602.3	46	N 623183.0 E 469624.1
37	N 623137.9 E 469607.7	47	N 623176.7 E 469631.2
38	N 623160.0 E 469591.3	48	N 623178.0 E 469633.8
39	N 623165.2 E 469587.4	49	N 623173.6 E 469638.9

#### LEGEND



NOTE: BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

#### GRAPHIC SCALE



( IN FEET )  
1 inch = 20 ft.



US Army Corps  
of Engineers

**FINAL EXCAVATION LIMITS**  
201 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.  
6-24-02

500805

500887

# **Confirmation Sample results for 207 East Camplain Road - Back Yard Excavation**

## **BOTTOM SAMPLES**

COMPOUND	ACG CRITERIA	UNITS	1
			SBS-207CAM-01
			44.1 - 45.1 ft. MSL
			0.5 - 1.5 ft. BGS
Benzo(a)anthracene	900	ug/kg	370 U
Benzo(b)fluoranthene	900	ug/kg	370 U
Benzo(k)fluoranthene	9000	ug/kg	370 U
Benzo(a)pyrene	860	ug/kg	370 U
Chrysene	90000	ug/kg	370 U
Dibenz(a,h)anthracene	860	ug/kg	370 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	370 U

NJDEP RDCSCC			1
Lead	400	mg/kg	32.4

## **SIDEWALL SAMPLES**

COMPOUND	ACG CRITERIA	UNITS	1		2		3		4	
			FCS-OU2-0100-207ECAMP-W1-45.5-7		FCS-OU2-9005-207ECAMP-W1-45.5-7		FCS-OU2-0102-207ECAMP-W2-45.5-7		FCS-OU2-0103-207ECAMP-W3-45.5-7	
			45.5 ft. MSL		45.5 ft. MSL		45.5 ft. MSL		45.5 ft. MSL	
			0.5 ft BGS		0.5 ft BGS		0.5 ft BGS		0.5 ft BGS	
Benzo(a)anthracene	900	ug/kg	330	U	330	U	103		330	U
Benzo(b)fluoranthene	900	ug/kg	330	U	330	U	116		330	U
Benzo(k)fluoranthene	9000	ug/kg	330	U	330	U	85		330	U
Benzo(a)pyrene	860	ug/kg	330	U	330	U	82		330	U
Chrysene	90000	ug/kg	330	U	330	U	98		330	U
Dibenz(a,h)anthracene	860	ug/kg	330	U	330	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	900	ug/kg	330	U	330	U	330	U	330	U
NJDEP RDCSCC			1		2		3		4	
Lead	400	mg/kg	17.8		15.9		25.9		16.5	

\*NOTE: All data has been validated

Qualifiers:

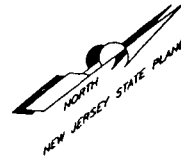
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U - Non Detect

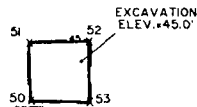
J - Estimated Value

D - Diluted Sample Results

RDCSCC = Residential Direct Contact  
Soil Cleanup Criteria



FINAL EXCAVATION COORDINATES 207 E. CAMPLAIN ROAD			
50	N 623260.6 E 469626.0	52	N 623273.8 E 469624.5
51	N 623266.2 E 469618.5	53	N 623267.8 E 469632.2



#### LEGEND

	FINAL EXCAVATION CONTOURS
	PROPERTY LINES
	CURB LINE

NOTE: BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

#### GRAPHIC SCALE



( IN FEET )  
1 inch = 20 ft.



US Army Corps  
of Engineers

#### FINAL EXCAVATION LIMITS

207 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.  
9-24-02

508005





# Confirmation Sample Results for 222 East Camplain Road

## BOTTOM SAMPLES

COMPOUND	CLEANUP GOALS	UNITS	1	2	3	4	5	6
			FCS-OU2-0048-222ECA-HF-38.1-7	FCS-OU2-0052-222ECA-CF-34.0-7	FCS-OU2-0083-222ECA-FF-35.0-7	FCS-OU2-0085-222ECA-AF-32.0-7	FCS-OU2-0088-222ECA-BF-34.0-7	FCS-OU2-0078-222ECA-EF-37.0-7
			38.1 ft. MSL	34.0 ft. MSL	35.0 ft. MSL	32.0 ft. MSL	34.0 ft. MSL	37.0 ft. MSL
			5 ft. BGS	7 ft. BGS	4 ft. BGS	7 ft. BGS	6 ft. BGS	6 ft. BGS
Benzo(a)anthracene	900	ug/kg	330 U	330 U	643	330 U	330 U	330 U
Benzo(b)fluoranthene	900	ug/kg	330 U	330 U	634	330 U	330 U	330 U
Benzo(k)fluoranthene	9000	ug/kg	330 U	330 U	665	330 U	330 U	330 U
Benzo(a)pyrene	660	ug/kg	330 U	330 U	547	330 U	330 U	330 U
Chrysene	90000	ug/kg	330 U	330 U	768	330 U	330 U	330 U
Dibenz(a,h)anthracene	660	ug/kg	330 U	330 U	196 J	330 U	330 U	330 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	330 U	330 U	354	330 U	330 U	330 U

## RIDEWALL SAMPLES

COMPOUND	CLEANUP GOALS	UNITS	1	2	3	4	5	6
			FCS-OU2-0047-222ECA-H1-40.1-7	FCS-OU2-0050-222ECA-E1-41.0-7	FCS-OU2-0053-222ECA-C1-36.5-7	FCS-OU2-0054-222ECA-C2-36.5-7	FCS-OU2-0055-222ECA-G1-35.0-7	FCS-OU2-0056-222ECA-G2-32.0-7
			40.1 ft. MSL	41.0 ft. MSL	36.5 ft. MSL	36.5 ft. MSL	35.0 ft. MSL	32.0 ft. MSL
			2 ft. BGS	2 ft. BGS	6 ft. BGS	6 ft. BGS	8 ft. BGS	8 ft. BGS
Benzo(a)anthracene	900	ug/kg	412	220	330 U	330 U	330 U	330 U
Benzo(b)fluoranthene	900	ug/kg	429	504	330 U	330 U	330 U	330 U
Benzo(k)fluoranthene	9000	ug/kg	463	236 J	330 U	330 U	330 U	330 U
Benzo(a)pyrene	660	ug/kg	379	306 J	330 U	330 U	330 U	330 U
Chrysene	90000	ug/kg	531	346	330 U	330 U	330 U	330 U
Dibenz(a,h)anthracene	660	ug/kg	140 J	114 J	330 U	330 U	330 U	330 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	243 J	216 J	330 U	330 U	330 U	330 U

\*NOTE: All data has been validated

Qualifiers:

ND - No Data

U - Non Detect

J - Estimated Value

D - Diluted Sample Results

50891

## Confirmation Sample Results for 222 East Camplain Road

### BOTTOM SAMPLES

COMPOUND	CLEANUP GOALS	UNITS	7	8
			FCS-OU2-0078-222ECA-GF-28.0-7	FCS-OU2-0083-222ECA-DF-31.0-7
			28.0 ft. MSL	31.0 ft. MSL
			12.5 ft. BGS	8 ft. BGS
Benzo(a)anthracene	900	ug/kg	330 U	202 J
Benzo(b)fluoranthene	900	ug/kg	330 U	206 J
Benzo(k)fluoranthene	9000	ug/kg	330 U	249 J
Benzo(a)pyrene	880	ug/kg	330 U	177 J
Chrysene	90000	ug/kg	330 U	250 J
Dibenz(a,h)anthracene	880	ug/kg	330 U	90 J
Indeno(1,2,3-cd)pyrene	900	ug/kg	330 U	145 J

### SIDEWALL SAMPLES

COMPOUND	CLEANUP GOALS	UNITS	7	8	9	10
			FCS-OU2-0082-222ECA-G4-32.0-7	FCS-OU2-0087-222ECA-A2-33.0-7	FCS-OU2-0079-222ECA-G3-30.5-7	FCS-OU2-0081-222ECA-A1-33.0-7
			32.0 ft. MSL	33.0 ft. MSL	30.5 ft. MSL	33.0 ft. MSL
			9.5 ft. BGS	8 ft. BGS	10 ft. BGS	8 ft. BGS
Benzo(a)anthracene	900	ug/kg	330 U	330 U	330 U	330 U
Benzo(b)fluoranthene	900	ug/kg	330 U	330 U	330 U	330 U
Benzo(k)fluoranthene	9000	ug/kg	330 U	330 U	330 U	330 U
Benzo(a)pyrene	880	ug/kg	330 U	330 U	330 U	330 U
Chrysene	90000	ug/kg	330 U	330 U	330 U	330 U
Dibenz(a,h)anthracene	880	ug/kg	330 U	330 U	330 U	330 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	330 U	330 U	330 U	330 U

\*NOTE: All data has been validated

Qualifiers:

ND - No Data

U - Non Detect

J - Estimated Value

D - Diluted Sample Results

500892

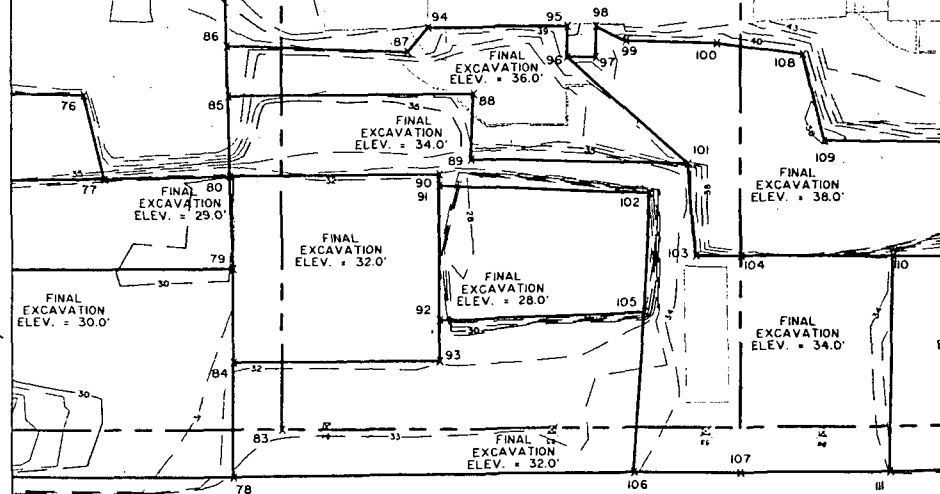
EAST CAMPLAIN ROAD



216  
CAMPLAIN RD.

222  
E. CAMPLAIN RD.

E. C.



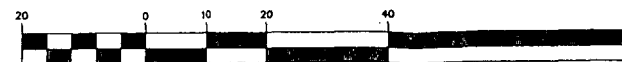
FINAL EXCAVATION COORDINATES 222 E. CAMPLAIN ROAD			
76	N 623284.6 E 469859.5	93	N 623302.2 E 469930.2
77	N 623278.7 E 469872.4	94	N 623335.0 E 469987.0
78	N 623264.1 E 469923.4	95	N 623352.6 E 469901.3
79	N 623285.6 E 469897	96	N 623349.5 E 469905.1
80	N 623294.7 E 469885.1	97	N 623353.2 E 469908.2
81	N 623339.9 E 469826.5	98	N 623356.3 E 469904.3
82	N 623347.9 E 469833.1	99	N 623358.6 E 469909.4
83	N 623275.1 E 469922.5	100	N 623369.8 E 469919.0
84	N 623275.9 E 469908.9	101	N 623354.0 E 469931.2
85	N 623302.7 E 469874.7	102	N 623346.1 E 469930.9
86	N 623307.7 E 469868.3	103	N 623345.4 E 469943.5
87	N 623330.0 E 469888.0	104	N 623350.9 E 469948.1
88	N 623334.0 E 469900.0	105	N 623333.1 E 469945.4
89	N 623327.0 E 469908.0	106	N 623353.3 E 469964.6
90	N 623321.4 E 469906.6	107	N 623328.6 E 469975.5
91	N 623320.3 E 469908.0	108	N 623379.3 E 469929.2
92	N 623308.3 E 469926.5		

# LEGEND



NOTE: BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR  
GRAPHICAL PURPOSES ONLY.

# GRAPHIC SCALE



( IN FEET )  
1 inch = 20 ft.

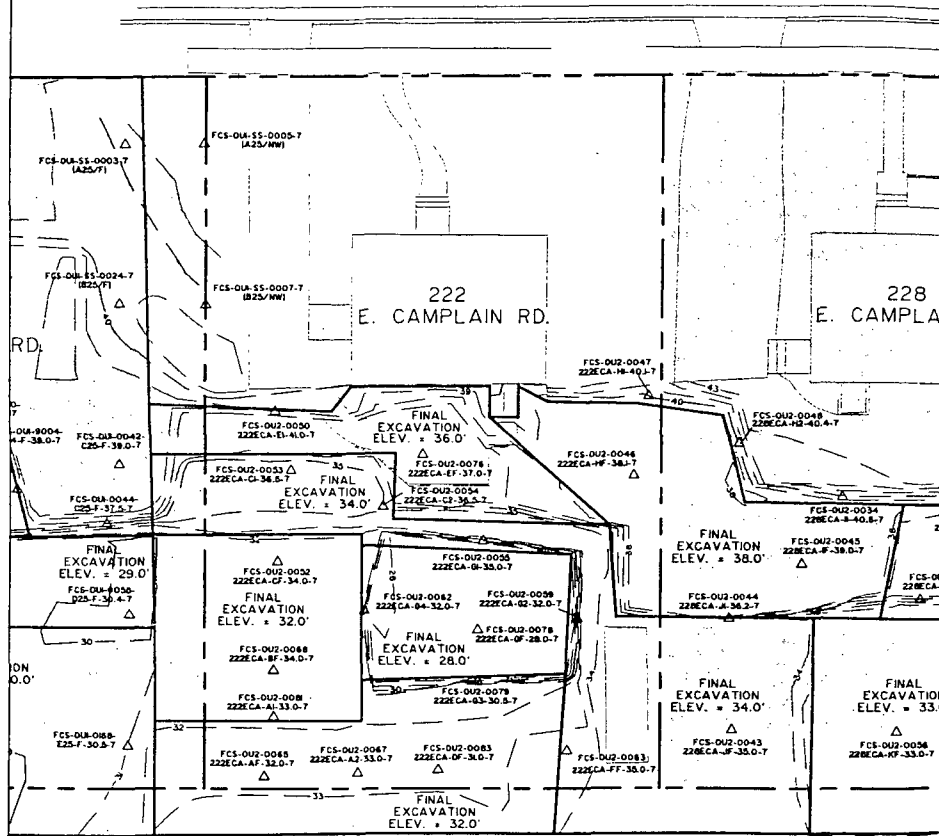


US Army Corps  
of Engineers

**FINAL EXCAVATION LIMITS**  
222 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.  
5-24-02

500893

E. CAMPLAIN ROAD



# LEGEND

- 36 — FINAL EXCAVATION CONTOURS
- — — — — PROPERTY LINES
- — — — — CURB LINE
- XXXX Δ CONFIRMATION SAMPLE

## NOTES

1. BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

## GRAPHIC SCALE



( IN FEET )  
1 inch = 20 ft.



US Army Corps  
of Engineers

## CONFIRMATION SAMPLE LOCATIONS

222 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.

500894

# Confirmation Sample Results for 228 East Camplain Road

## BOTTOM SAMPLES

COMPOUND	CLEANUP GOALS	UNITS	1	2	3	4	5
			FCS-OU2-0037-228ECA-MF-37.0-7A	FCS-OU2-0040-228ECA-LF-35.0-7	FCS-OU2-0002-228ECA-LF-35.0-7	FCS-OU2-0043-228ECA-JF-35.0-7	FCS-OU2-0045-228ECA-IF-39.0-7
			37.0 ft. MSL	35.0 ft. MSL	35.0 ft. MSL	35.0 ft. MSL	39.0 ft. MSL
			5 ft BGS	4 ft BGS	4 ft BGS	5 ft BGS	1.5 ft BGS
Benzo(a)anthracene	900	ug/kg	131 J	340	211 J	582	360
Benzo(b)fluoranthene	900	ug/kg	138 J	337	255 J	444	388
Benzo(k)fluoranthene	9000	ug/kg	142 J	354	272 J	886	463
Benzo(a)pyrene	660	ug/kg	126 J	320 J	230 J	516	394
Chrysene	90000	ug/kg	170 J	473	317 J	686	502
Dibenz(a,h)anthracene	660	ug/kg	330 U	113 J	77 J	190 J	142 J
Indeno(1,2,3-cd)pyrene	900	ug/kg	80 J	204 J	149 J	351	250 J

## SIDEWALL SAMPLES

COMPOUND	CLEANUP GOALS	UNITS	1	2	3	4	5	6
			FCS-OU2-0034-228ECA-I1-40.6-7	FCS-OU2-0035-228ECA-L1-38.0-7	FCS-OU2-0038-228ECA-M1-40.8-7A	FCS-OU2-0044-228ECA-J1-36.2-7	FCS-OU2-0048-228ECA-H2-40.4-7	FCS-OU2-0057-228ECA-K1-38.0-7
			40.6 ft. MSL	38.0 ft. MSL	40.8 ft. MSL	36.2 ft. MSL	38.1 ft. MSL	38.0 ft. MSL
			2 ft BGS	3 ft BGS	2 ft BGS	4 ft BGS	2 ft BGS	3 ft BGS
Benzo(a)anthracene	900	ug/kg	205 J	330 U	108 J	330 U	312 J	330 U
Benzo(b)fluoranthene	900	ug/kg	268 J	330 U	109 J	330 U	263 J	330 U
Benzo(k)fluoranthene	9000	ug/kg	264 J	330 U	165 J	330 U	330	330 U
Benzo(a)pyrene	660	ug/kg	211 J	330 U	101 J	330 U	318 J	330 U
Chrysene	90000	ug/kg	287 J	330 U	133 J	330 U	352	330 U
Dibenz(a,h)anthracene	660	ug/kg	330 U	330 U	330 U	330 U	104 J	330 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	105 J	330 U	80 J	330 U	152 J	330 U

\*NOTE: All data has been validated

Qualifiers:

ND - No Data

U - Non Detect

J - Estimated Value

D - Diluted Sample Results

500895

## Confirmation Sample Results for 228 East Camplain Road

### BOTTOM SAMPLES

COMPOUND	CLEANUP GOALS	UNITS	6	7
			FCS-OU2-0046-222ECA-HF-38.1-7	FCS-OU2-0083-222ECA-FF-35.0-7
			38.1 ft. MSL	35.0 ft. MSL
			5 ft BGS	4 ft BGS
Benzo(a)anthracene	900	ug/kg	330 U	643
Benzo(b)fluoranthene	900	ug/kg	330 U	634
Benzo(k)fluoranthene	9000	ug/kg	330 U	665
Benzo(a)pyrene	660	ug/kg	330 U	547
Chrysene	90000	ug/kg	330 U	788
Dibenz(a,h)anthracene	660	ug/kg	330 U	196 J
Indeno(1,2,3-cd)pyrene	900	ug/kg	330 U	354

### SIDEWALL SAMPLES

COMPOUND	CLEANUP GOALS	UNITS	7	8
			FCS-OU2-0047-222ECA-H1-40.1-7	FCS-OU2-0031-234ECA-M2-40.9-7
			40.1 ft. MSL	40.9 ft. MSL
			2 ft BGS	2 ft BGS
Benzo(a)anthracene	900	ug/kg	412	240 J
Benzo(b)fluoranthene	900	ug/kg	426	260 J
Benzo(k)fluoranthene	9000	ug/kg	463	309 J
Benzo(a)pyrene	660	ug/kg	379	213 J
Chrysene	90000	ug/kg	531	326 J
Dibenz(a,h)anthracene	660	ug/kg	140 J	330 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	243 J	84 J

\*NOTE: All data has been validated

Qualifiers:

ND - No Data

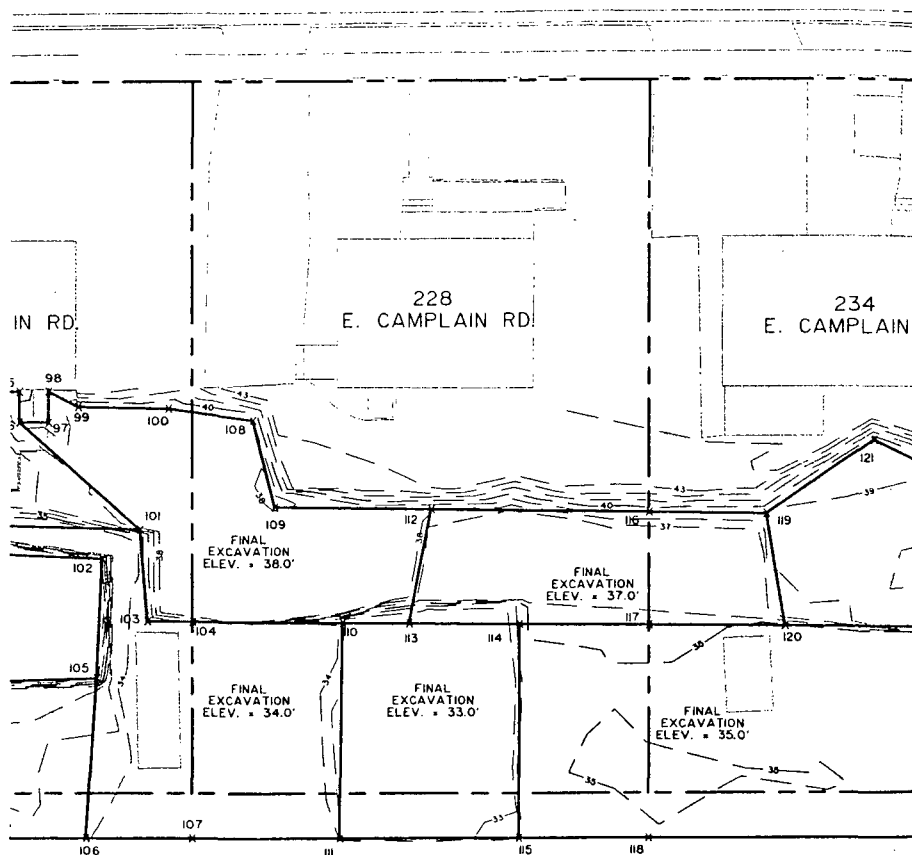
U - Non Detect

J - Estimated Value

D - Diluted Sample Results

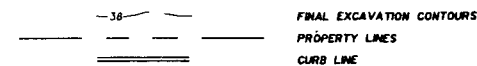
50089

# EAST CAMPLAIN ROAD



FINAL EXCAVATION COORDINATES 228 E. CAMPLAIN ROAD			
100	N 623369.8 E 469919.0	111	N 623347.6 E 469990.9
101	N 623354.0 E 469931.2	112	N 623392.9 E 469958.9
103	N 623345.4 E 469943.5	113	N 623378.4 E 469970.9
104	N 623350.9 E 469948.1	114	N 623392.4 E 469982.5
107	N 623328.6 E 469975.5	115	N 623370.4 E 470009.5
108	N 623379.3 E 469929.2	116	N 623420.2 E 469981.8
109	N 623373.2 E 469942.3	117	N 623408.7 E 469996.0
110	N 623370.1 E 469964.0	118	N 623386.8 E 470022.9

## LEGEND



NOTE: BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

## GRAPHIC SCALE



( IN FEET )  
1 inch = 20 ft.



US Army Corps  
of Engineers

## FINAL EXCAVATION LIMITS

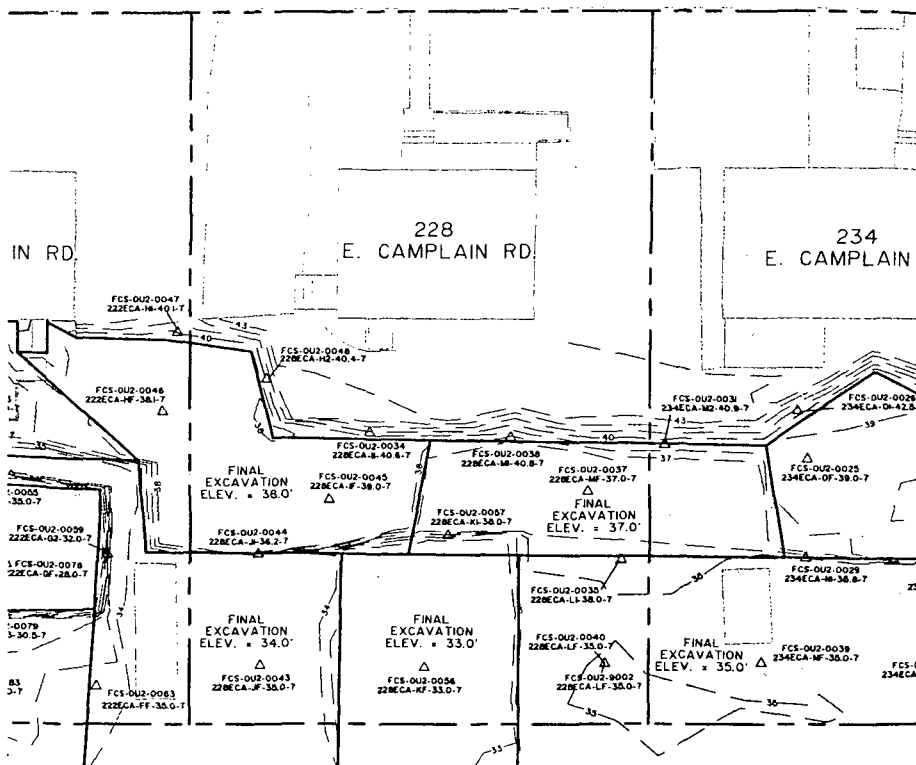
228 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.

500897

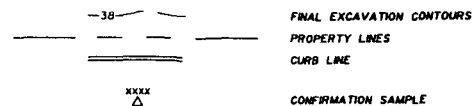
8-24-02



E. CAMPLAIN ROAD



LEGEND



NOTES

1. BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

GRAPHIC SCALE



( IN FEET )  
1 inch = 20 ft.

500898



US Army Corps  
of Engineers

CONFIRMATION SAMPLE LOCATIONS

228 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.

8-79-02

# Confirmation Sample Results for 234 East Camplain Road

## BOTTOM SAMPLES

COMPOUND	CLEANUP GOALS	UNITS	1	2	3	4	5
			FCS-OU2-0020-234ECA-RF-37.0-7	FCS-OU2-0021-234ECA-QF-39.0-7	FCS-OU2-0001-234ECA-QF-39.0-7	FCS-OU2-0025-234ECA-QF-39.0-7	FCS-OU2-0027-234ECA-PF-35.0-7
			37.0 ft. MSL	39.0 ft. MSL	39.0 ft. MSL	39.0 ft. MSL	35.0 ft. MSL
			2.5 ft BGS	3 ft BGS	3 ft BGS	3.5 ft BGS	5 ft BGS
Benzo(a)anthracene	900	ug/kg	330 U	95 J	80 J	330 U	330 U
Benzo(b)fluoranthene	900	ug/kg	330 U	81 J	84 J	330 U	330 U
Benzo(k)fluoranthene	9000	ug/kg	330 U	330 U	330 U	330 U	330 U
Benzo(a)pyrene	660	ug/kg	330 U	330 U	330 U	330 U	330 U
Chrysene	90000	ug/kg	330 U	101 J	84 J	330 U	330 U
Dibenz(a,h)anthracene	660	ug/kg	330 U	330 U	330 U	330 U	330 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	330 U	330 U	330 U	330 U	330 U

## SIDEWALL SAMPLES

COMPOUND	CLEANUP GOALS	UNITS	1	2	3	4	5	6
			FCS-OU2-0018-234ECA-R2-36.0-7	FCS-OU2-0019-234ECA-R3-36.0-7	FCS-OU2-0023-234ECA-Q1-42.0-7	FCS-OU2-0024-234ECA-Q2-40.8-7	FCS-OU2-0026-234ECA-Q1-42.5-7	FCS-OU2-0028-234ECA-P1-36.6-7
			36.0 ft. MSL	36.0 ft. MSL	42.0 ft. MSL	40.8 ft. MSL	42.5 ft. MSL	36.6 ft. MSL
			3 ft BGS	4 ft BGS	1 ft BGS	3.5 ft BGS	1.5 ft BGS	4 ft BGS
Benzo(a)anthracene	900	ug/kg	330 U	330 U	132 J	330 U	330 U	330 U
Benzo(b)fluoranthene	900	ug/kg	330 U	330 U	110 J	330 U	330 U	330 U
Benzo(k)fluoranthene	9000	ug/kg	330 U	330 U	103 J	330 U	330 U	330 U
Benzo(a)pyrene	660	ug/kg	330 U	330 U	89 J	330 U	330 U	330 U
Chrysene	90000	ug/kg	330 U	330 U	148 J	330 U	330 U	330 U
Dibenz(a,h)anthracene	660	ug/kg	330 U	330 U	330 U	330 U	330 U	330 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	330 U	330 U	330 U	330 U	330 U	330 U

\*NOTE: All data has been validated

Qualifiers:

ND - No Data

U - Non Detect

J - Estimated Value

D - Diluted Sample Results

500899

# Confirmation Sample Results for 234 East Camplain Road

## BOTTOM SAMPLES

COMPOUND	CLEANUP GOALS	UNITS	6	7
			FCS-OU2-0037-228ECA-MF-37.0-7A	FCS-OU2-0040-228ECA-LF-35.0-7
			37.0 ft. MSL	35.0 ft. MSL
			5 ft BGS	4 ft BGS
Benzo(a)anthracene	900	ug/kg	131 J	340
Benzo(b)fluoranthene	900	ug/kg	138 J	337
Benzo(k)fluoranthene	9000	ug/kg	142 J	354
Benzo(e)pyrene	660	ug/kg	126 J	320 J
Chrysene	90000	ug/kg	170 J	473
Dibenz(a,h)anthracene	660	ug/kg	330 U	113 J
Indeno(1,2,3-cd)pyrene	900	ug/kg	80 J	204 J

## SIDEWALL SAMPLES

COMPOUND	CLEANUP GOALS	UNITS	7	8	9	10
			FCS-OU2-0029-234ECA-N1-36.8-7	FCS-OU2-0031-234ECA-M2-40.9-7	FCS-OU2-0035-228ECA-L1-36.0-7	FCS-OU2-0017-240ECA-R1-36.0-7
			36.8 ft. MSL	40.9 ft. MSL	36.0 ft. MSL	36.0 ft. MSL
			4 ft BGS	2 ft BGS	3 ft BGS	3 ft BGS
Benzo(a)anthracene	900	ug/kg	330 U	240 J	330 U	330 U
Benzo(b)fluoranthene	900	ug/kg	330 U	260 J	330 U	330 U
Benzo(k)fluoranthene	9000	ug/kg	330 U	309 J	330 U	330 U
Benzo(e)pyrene	660	ug/kg	330 U	213 J	330 U	330 U
Chrysene	90000	ug/kg	330 U	326 J	330 U	330 U
Dibenz(a,h)anthracene	660	ug/kg	330 U	330 U	330 U	330 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	330 U	84 J	330 U	330 U

\*NOTE: All data has been validated

Qualifiers:

ND - No Data

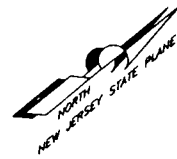
U - Non Detect

J - Estimated Value

D - Diluted Sample Results

500900

EAST CAMPLAIN ROAD



FINAL EXCAVATION COORDINATES 234 E. CAMPLAIN ROAD			
116	N 623420.2 E 469981.8	122	N 623467.8 E 470021.5
117	N 623408.7 E 469996.0	123	N 623454.1 E 470033.6
118	N 623386.8 E 470022.9	124	N 623433.2 E 470060.7
119	N 623434.7 E 469994.0	125	N 623479.2 E 470036.0
120	N 623425.6 E 470010.0	126	N 623470.3 E 470047.0
121	N 623455.8 E 469995.9	127	N 623448.8 E 470073.4

228  
CAMPLAIN RD.

234  
E. CAMPLAIN RD.

E. CA

# LEGEND



NOTE: BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

# GRAPHIC SCALE



( IN FEET )  
1 inch = 20 ft.

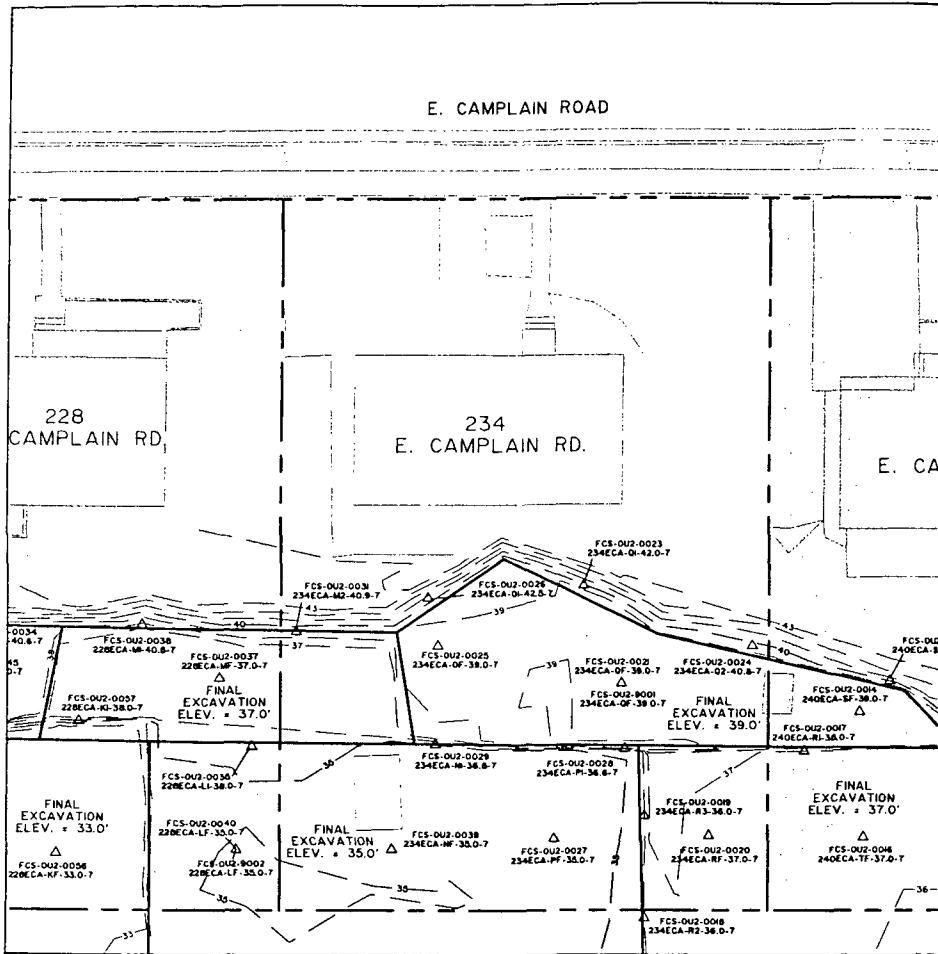


US Army Corps  
of Engineers

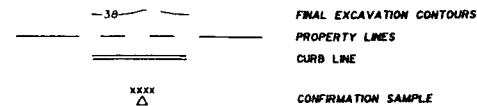
# FINAL EXCAVATION LIMITS

234 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.

500901



# LEGEND



## NOTES

1. BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

## GRAPHIC SCALE



( IN FEET )  
1 inch = 20 ft.

500902



US Army Corps  
of Engineers

## CONFIRMATION SAMPLE LOCATIONS

234 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.

0-79-02

# Confirmation Sample Results for 240 East Camplain Road

## BOTTOM SAMPLES

COMPOUND	CLEANUP GOALS	UNITS	1	2	3	4
			FCS-OU2-0010-240ECA-UF-37.0-7	FCS-OU2-0014-240ECA-SF-39.0-7	FCS-OU2-0016-240ECA-TF-37.0-7	FCS-OU2-0020-234ECA-RF-37.0-7
			37.0 ft. MSL	39.0 ft. MSL	37.0 ft. MSL	37.0 ft. MSL
			3ft BGS	3ft BGS	3 ft BGS	2.5 ft BGS
Benzo(a)anthracene	900	ug/kg	332	330 U	330 U	330 U
Benzo(b)fluoranthene	900	ug/kg	428	330 U	288 J	330 U
Benzo(k)fluoranthene	9000	ug/kg	454	330 U	89 J	330 U
Benzo(a)pyrene	660	ug/kg	289 J	330 U	321 J	330 U
Chrysene	90000	ug/kg	478	330 U	127 J	330 U
Dibenz(a,h)anthracene	660	ug/kg	330 U	330 U	344 J	330 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	135 J	330 U	188 J	330 U

## SIDEWALL SAMPLES

COMPOUND	CLEANUP GOALS	UNITS	1	2	3	4	5	6
			FCS-OU2-0008-240ECA-U1-38.5-7	FCS-OU2-0007-240ECA-U2-38.0-7	FCS-OU2-0008-240ECA-U3-38.0-7	FCS-OU2-0009-240ECA-U4-38.0-7	FCS-OU2-0012-240ECA-S1-40.6-7	FCS-OU2-0013-240ECA-S2-40.0-7
			38.5 ft. MSL	38.0 ft. MSL	38.0 ft. MSL	38.0 ft. MSL	40.6 ft. MSL	40.0 ft. MSL
			2.5 ft BGS	2 ft BGS	1 ft BGS	1 ft BGS	2 ft BGS	1.5 ft BGS
Benzo(a)anthracene	900	ug/kg	330 U	173 J	330 U	330 U	330 U	330 U
Benzo(b)fluoranthene	900	ug/kg	330 U	264 J	330 U	330 U	330 U	330 U
Benzo(k)fluoranthene	9000	ug/kg	330 U	170 J	330 U	330 U	330 U	330 U
Benzo(a)pyrene	660	ug/kg	330 U	192 J	330 U	330 U	330 U	330 U
Chrysene	90000	ug/kg	330 U	217 J	330 U	330 U	330 U	330 U
Dibenz(a,h)anthracene	660	ug/kg	330 U	330 U	330 U	330 U	330 U	330 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	330 U	110 J	330 U	330 U	330 U	330 U

\*NOTE: All data has been validated

Qualifiers:

ND - No Data

U - Non Detect

J - Estimated Value

D - Diluted Sample Results

500903

# Confirmation Sample Results for 240 East Camplain Road

## SIDEWALL SAMPLES

COMPOUND	CLEANUP GOALS	UNITS	7	8	9
			FCS-OU2-0015-240ECA-T1-38,0-7	FCS-OU2-0017-240ECA-R1-38,0-7	FCS-OU2-0024-234ECA-Q2-40,8-7
			38.0 ft. MSL	38.0 ft. MSL	40.8 ft. MSL
			1 ft. BGS	3 ft. BGS	3.5 ft. BGS
Benzo(a)anthracene	900	ug/kg	330 U	330 U	330 U
Benzo(b)fluoranthene	900	ug/kg	330 U	330 U	330 U
Benzo(k)fluoranthene	9000	ug/kg	330 U	330 U	330 U
Benzo(e)pyrene	660	ug/kg	330 U	330 U	330 U
Chrysene	90000	ug/kg	330 U	330 U	330 U
Dibenz(a,h)anthracene	660	ug/kg	330 U	330 U	330 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	330 U	330 U	330 U

\*NOTE: All data has been validated

Qualifiers:

ND - No Data

U - Non Detect

J - Estimated Value

D - Diluted Sample Results

500904

EAST CAMPLAIN ROAD



FINAL EXCAVATION COORDINATES 240 E. CAMPLAIN ROAD			
I25	N 623479.2 E 470036.0	I30	N 623477.8 E 470087.2
I26	N 623470.3 E 470047.0	I31	N 623472.0 E 470092.4
I27	N 623448.8 E 470073.4	I32	N 623507.7 E 470078.9
I28	N 623493.3 E 470054.1	I33	N 62354.8 E 470098.6
I29	N 623494.6 E 470067.2	I34	N 623506.1 E 47010.3

# LEGEND

	FINAL EXCAVATION CONTOURS
	PROPERTY LINES
	CURB LINE

NOTE: BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

## GRAPHIC SCALE



( IN FEET )  
1 inch = 20 ft.



US Army Corps  
of Engineers

**FINAL EXCAVATION LIMITS**  
240 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.

506005

9-24-02



E. CAMPLAIN ROAD



**LEGEND**

- FINAL EXCAVATION CONTOURS
- PROPERTY LINES
- CURB LINE
- CONFIRMATION SAMPLE

**NOTES**

1. BUILDINGS, CONCRETE, PAVEMENT ETC SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

**GRAPHIC SCALE**



( IN FEET )  
1 inch = 20 ft

500906



US Army Corps  
of Engineers

**CONFIRMATION SAMPLE LOCATIONS**

240 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.

8-29-07

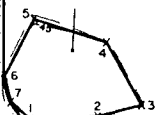


FINAL EXCAVATION COORDINATES 255 E. CAMPLAIN ROAD			
1	N 623655.3 E 470015.7	5	N 623665.4 E 470005.5
2	N 623664.2 E 470022.3	6	N 623656.5 E 470007.6
3	N 623670.8 E 470025.5	7	N 623654.7 E 470011.5
4	N 623672.8 E 470013.8		

VALERIE DRIVE

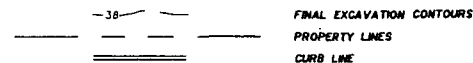
255  
E. CAMPLAIN RD.

FINAL  
EXCAVATION  
ELEV. = 44.5'



E. CAMPLAIN ROAD

#### LEGEND



NOTE: BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR  
GRAPHICAL PURPOSES ONLY.

#### GRAPHIC SCALE



( IN FEET )

1 inch = 20 ft.



**FINAL EXCAVATION LIMITS**  
255 E. CAMPLAIN ROAD  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.

8-79-02

500907

# Confirmation Sample results for 22 Florence Court - Front Yard Excavation

## BOTTOM SAMPLES - FRONT YARD

COMPOUND	ACG CRITERIA	UNITS	1
			SBS-22FLO-09
			48 - 48.5 ft. MSL
			1.5 - 2 ft. BGS
Benzo(a)anthracene	900	ug/kg	350
Benzo(b)fluoranthene	900	ug/kg	580
Benzo(k)fluoranthene	9000	ug/kg	220 J
Benzo(a)pyrene	660	ug/kg	400
Chrysene	90000	ug/kg	480
Dibenz(a,h)anthracene	660	ug/kg	67 J
Indeno(1,2,3-cd)pyrene	900	ug/kg	230 J

## SIDEWALL SAMPLES - FRONT YARD

COMPOUND	ACG CRITERIA	UNITS	1	2	3
			SSS-22FLO-11	SSS-22FLO-11-D	22FLO-009
			49.5 - 50 ft. MSL	49.5 - 50 ft. MSL	49.4 - 49.7 ft. MSL
			0 - 0.5 ft. BGS	0 - 0.5 ft. BGS	0 - 0.25 ft. BGS
Benzo(a)anthracene	900	ug/kg	420	640	140 J
Benzo(b)fluoranthene	900	ug/kg	670	800	180 J
Benzo(k)fluoranthene	9000	ug/kg	290 J	430	150 J
Benzo(a)pyrene	660	ug/kg	380	510	130 J
Chrysene	90000	ug/kg	570	850	170 J
Dibenz(a,h)anthracene	660	ug/kg	50 J	100 J	41 J
Indeno(1,2,3-cd)pyrene	900	ug/kg	160 J	300 J	86 J

\*NOTE: All data has been validated

Qualifiers:

ND - No Data

U - Non Detect

J - Estimated Value

D - Diluted Sample Results

# Confirmation Sample results for 22 Florence Court - Side Yard Excavation

## BOTTOM SAMPLES - SIDE YARD

COMPOUND	ACG CRITERIA	UNITS	1
			SBS-22FLO-06
			48.5 - 49.5 ft. MSL
			0.5 - 1.5 ft. BGS
Benzo(a)anthracene	900	ug/kg	250 J
Benzo(b)fluoranthene	900	ug/kg	450
Benzo(k)fluoranthene	9000	ug/kg	150 J
Benzo(a)pyrene	660	ug/kg	240 J
Chrysene	90000	ug/kg	320 J
Dibenz(a,h)anthracene	660	ug/kg	370 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	120 J

## SIDEWALL SAMPLES - SIDE YARD

COMPOUND	ACG CRITERIA	UNITS	1	2	3
			SSS-22FLO-13	SSS-22FLO-17	SSS-22FLO-18
			49.5 - 50 ft. MSL	49 - 49.5 ft. MSL	49 - 49.5 ft. MSL
			0 - 0.5 ft. BGS	0.5 - 1.0 ft. BGS	0.5 - 1.0 ft. BGS
Benzo(a)anthracene	900	ug/kg	640	130 J	110 J
Benzo(b)fluoranthene	900	ug/kg	850	230 J	200 J
Benzo(k)fluoranthene	9000	ug/kg	350 J	66 J	70 J
Benzo(a)pyrene	660	ug/kg	540 J	110 J	100 J
Chrysene	90000	ug/kg	900	180 J	170 J
Dibenz(a,h)anthracene	660	ug/kg	580 U	390 U	370 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	310 J	76 J	70 J

\*NOTE: All data has been validated

Qualifiers:

ND - No Data

U - Non Detect

J - Estimated Value

D - Diluted Sample Results

# Confirmation Sample results for 22 Florence Court - Back Yard Excavation

## BOTTOM SAMPLES - BACK YARD

COMPOUND	ACG CRITERIA	UNITS	1	2		3
			SBS-22FLO-04	SBS-22FLO-07	SBS-22FLO-07-D	22FLO-S131A
			48.5 - 49.5 ft. MSL	48.5 - 49 ft. MSL	48.5 - 49 ft. MSL	48 - 49.5 ft. MSL
			0.5 - 1.5 ft. BGS	1 - 1.5 ft. BGS	1 - 1.5 ft. BGS	0.5 - 2 ft. BGS
Benzo(a)anthracene	900	ug/kg	130 J	290 J	430	380 U
Benzo(b)fluoranthene	900	ug/kg	190 J	550	800	380 U
Benzo(k)fluoranthene	9000	ug/kg	71 J	220 J	330 J	380 U
Benzo(a)pyrene	660	ug/kg	110 J	290 J	420	380 U
Chrysene	90000	ug/kg	160 J	440	660	380 U
Dibenz(a,h)anthracene	660	ug/kg	410 U	360 U	78 J	380 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	74 J	200 J	260 J	380 U

## SIDEWALL SAMPLES - BACK YARD

COMPOUND	ACG CRITERIA	UNITS	1	2	3	4	5
			22FLO-058	22FLO-066	22FLO-074	SSS-22FLO-01	31LOU-075
			49.7 - 50 ft. MSL	49.7 - 50 ft. MSL	49.7 - 50 ft. MSL	49.5 - 50 ft. MSL	49.7 - 50 ft. MSL
			0 - 0.25 ft. BGS	0 - 0.25 ft. BGS	0 - 0.25 ft. BGS	0 - 0.5 ft. BGS	0 - 0.25 ft. BGS
Benzo(a)anthracene	900	ug/kg	160 J	230 J	160 J	320 J	220 J
Benzo(b)fluoranthene	900	ug/kg	380 U	420 U	230 J	650	420
Benzo(k)fluoranthene	9000	ug/kg	290 J	420	150 J	180 J	270 J
Benzo(a)pyrene	660	ug/kg	180 J	230 J	160 J	310 J	220 J
Chrysene	90000	ug/kg	220 J	290 J	200 J	430 J	330 J
Dibenz(a,h)anthracene	660	ug/kg	53 J	88 J	54 J	440 U	410 U
Indeno(1,2,3-cd)pyrene	900	ug/kg	120 J	140 J	120 J	180 J	170 J

\*NOTE: All data has been validated

Qualifiers:

ND - No Data

U - Non Detect

J - Estimated Value

D - Diluted Sample Results



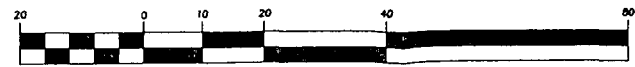
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3	N 622973.1 E 469158.6	13	N 622930.4 E 469152.6
4	N 622988.2 E 469169.6	14	N 622999.8 E 469131.6
5	N 622981.5 E 469182.1	15	N 623006.9 E 469125.5
6	N 622972.8 E 469194.2	16	N 623013.4 E 469122.5
7	N 622902.6 E 469123.6	17	N 623023.8 E 469134.9
8	N 622914.8 E 469091.0	18	N 623020.2 E 469143.7
9	N 622916.9 E 469091.2	19	N 623014.0 E 469149.8
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LEGEND

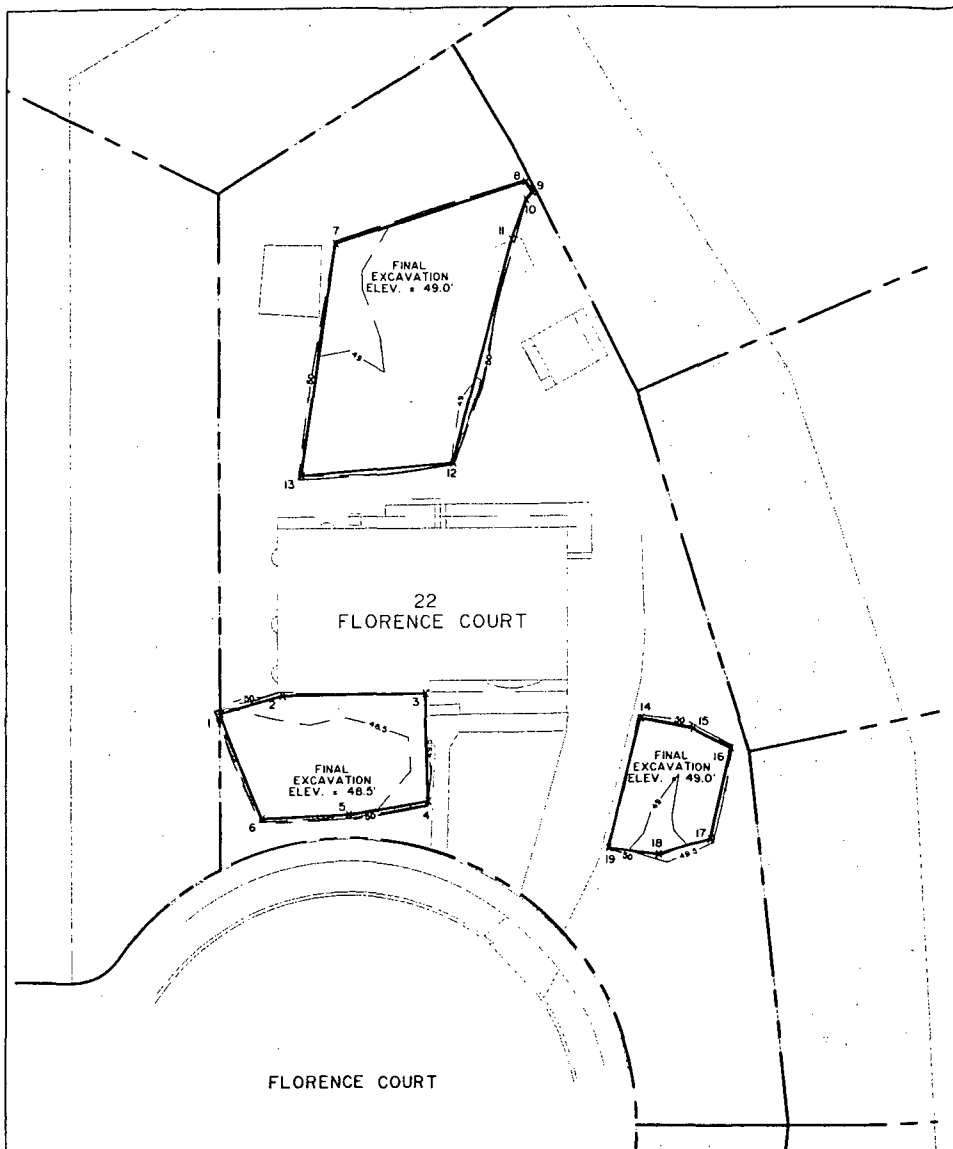
- 30- FINAL EXCAVATION CONTOURS
- PROPERTY LINES
- == CURB LINE

NOTE: BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

GRAPHIC SCALE

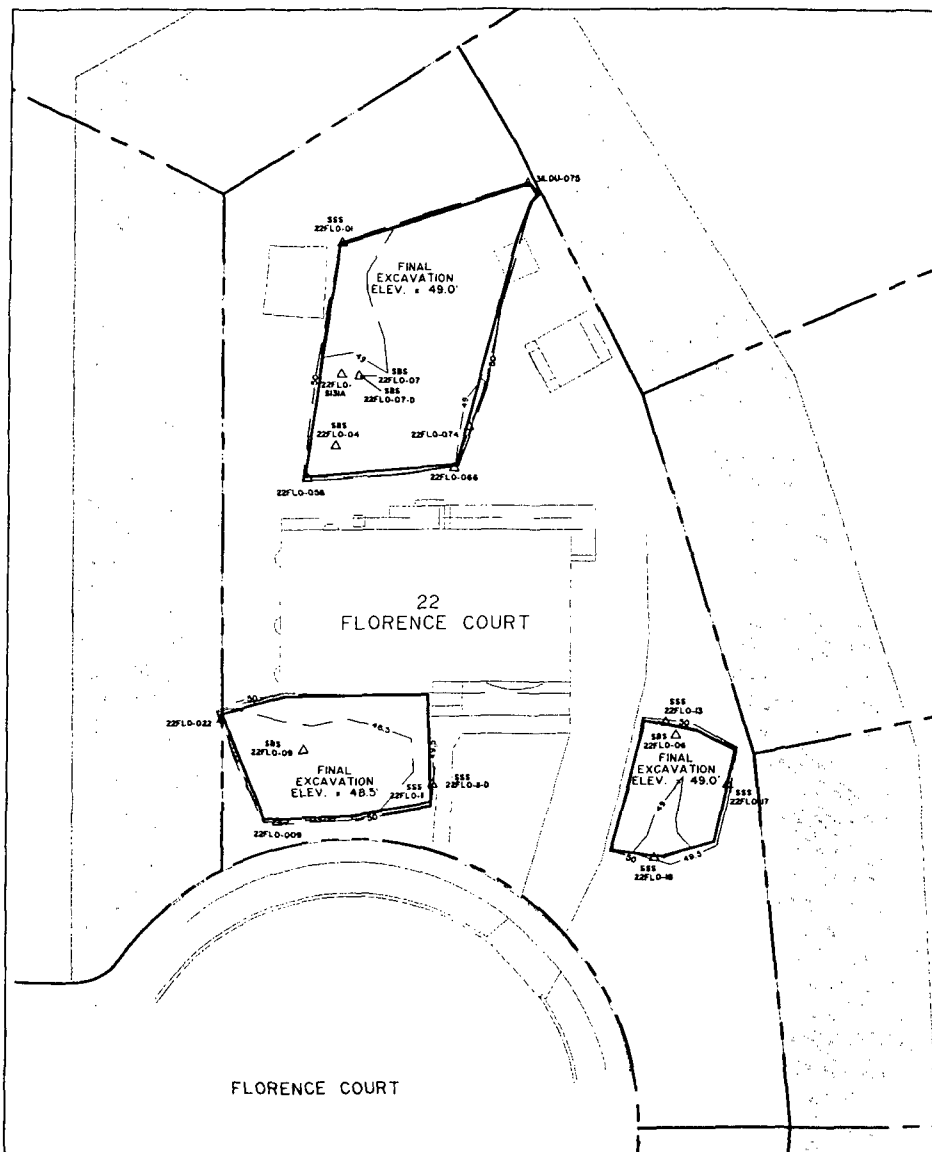


( IN FEET )  
1 inch = 20 ft

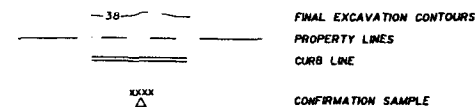


US Army Corps  
of Engineers

FINAL EXCAVATION LIMITS  
22 FLORENCE COURT  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.



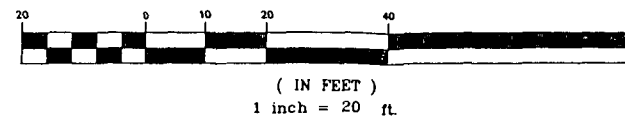
# LEGEND



# NOTES

1. BUILDINGS, CONCRETE, PAVEMENT ETC. SHOWN HEREON ARE FOR GRAPHICAL PURPOSES ONLY.

# GRAPHIC SCALE



US Army Corps  
of Engineers

# CONFIRMATION SAMPLE LOCATIONS

22 FLORENCE COURT  
FEDERAL CREOSOTE SUPERFUND SITE  
BOROUGH OF MANVILLE, SOMERSET COUNTY, N.J.

500912

## Appendix F

500913



# Sevenson Environmental Services, Inc.

- INSPECTION SUMMARY FORM
- SITE INSPECTION FORM

500914

# Sevenson Environmental Services, Inc.

## Health and Safety Site Inspection Form

Inspector: Paul J. Hitcho

Inspection Date: April 24, 2002

### Section 1: Project Description

Project Name: Federal Creosote

Site Location: Manville, NJ

Project Number: \_\_\_\_\_

Project Manager: Gordon McDonald

Superintendent: Perry Novak

Site Safety and Health Officer (SSHO): Eric Tschudi

Operations:

☐ Industrial Operations

☒ Remedial Operations

☐ Dewatering Operations

☐ Drum Handling Operations

☐ Drilling Operations

☐ Other: \_\_\_\_\_

☐ Emergency Response

☒ Excavation/Trenching/Shoring

☐ Confined Space Entry

☐ Thermal Desorption Operations

☐ Decontamination Operations

### Section 2: General Site Setup/Support Zone

#### A. Site Setup

- |   |   |                             |                              |
|---|---|-----------------------------|------------------------------|
| 1. Are work zones clearly defined?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 2. Are support trailers located to minimize exposure from a potential release?                | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 3. Are support trailers accessible for approach by emergency vehicles?                        | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 4. Is the site properly secured during and after work hours?                                  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 5. Are adequate communications (telephones, radios) available on site?                        | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 6. Is drinking water available?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 7. Are adequate toilet facilities available on site?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 8. Are eating and food storage areas clean and maintained?                                    | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 9. Is there adequate lighting?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 10. Are Lock-Out/Tag-Out Kits available on site?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 11. Do all site personnel have a 40 hour certificate?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 12. Do Managers and/or Supervisors have a certificate for the 8 hours of additional training? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |

- |   |   |                             |                              |
|---|---|-----------------------------|------------------------------|
| 13. Have all site personnel received medical surveillance in the previous 12 months?                                      | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 14. Are disposal arrangements in place for spent PPE and decontamination wash waters?                                     | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 15. Is all of the emergency and first aid equipment that is identified in the Site HASP available on site?                | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 16. Does the SSHO conduct daily safety inspections which are documented to identify safety hazards and unsafe conditions? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 17. Are accident/injury investigation forms available?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 18. Are all known safety hazards and unsafe conditions corrected?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |

#### B. Health and Safety Plan

- |  |   |                             |                              |
|--|---|-----------------------------|------------------------------|
| 1. Is a Site HASP accessible to all employees?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 2. Has the Site HASP been briefed to employees on site?                                    | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 3. Are the MSDSs available for review by employees on site?                                | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 4. Is there a designated SSHO on site?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 5. Are employees aware and understand the results of exposure?                             | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 6. Is the air monitoring plan in place?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 7. Are air monitoring devices properly used, calibrated and maintained?                    | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 8. Are air monitoring results logged and available for review?                             | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 9. Does the Site HASP include the following:   |   |                             |                              |
| • Site Characterization, description of existing conditions.                               | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Personnel training requirements.   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • A written PPE program describing the types and usage.                                    | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Listing of PPE required for each site task.  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Is there a hazard/risk analysis for all site activities?                                 | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Are the frequency and types of air monitoring presented?                                 | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Are both personnel and equipment decontamination procedures presented?                   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Is an emergency response plan presented?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Are the medical surveillance requirements presented?                                     | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Has the nearest medical assistance been identified?                                      | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Is there a discussion of site control measures (i.e., fencing, security, work zones)?    | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Description of confined space entry procedures (if this work will occur).                | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Has a spill containment program been included?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Is the Severson Corporate HASP available for all pertinent activities?                   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Are the programs and procedures presented in the Site and Corporate HASP being followed? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| • Have site personnel received training as outlined in the Site HASP?                      | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |

#### C. Site Posters

- |   |   |                             |                              |
|---|---|-----------------------------|------------------------------|
| 1. Are the following documents posted in a prominent and accessible area? |   |                             |                              |
| <input checked="" type="checkbox"/> Department of Labor 5 - 1 Poster      | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| <input checked="" type="checkbox"/> OSHA 300 Log                          | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |

#### D. Emergency Plans

- |  |   |                             |                              |
|--|---|-----------------------------|------------------------------|
| 1. Are emergency telephone numbers posted and verified?                    | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 2. Have emergency escape routes been designated?                           | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 3. Are employees familiar with the emergency signals?                      | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 4. Is the hospital route posted?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 5. Are employees familiar with emergency procedures?                       | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 6. Is the inventory of emergency response equipment and supplies adequate? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |

#### E. Medical and First Aid

- |  |   |  |                              |
|--|---|--|------------------------------|
| 1. Are First Aid Kits accessible and identified?                                       | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            | <input type="checkbox"/> N/A |
| 2. Are emergency eye washes available and in proper working order?                     | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            | <input type="checkbox"/> N/A |
| 3. Are emergency showers available?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            | <input type="checkbox"/> N/A |
| 4. Are the First Aid Kits large enough for the number of people on site?               | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            | <input type="checkbox"/> N/A |
| 5. Are the First Aid Kits inspected after each use?                                    | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            | <input type="checkbox"/> N/A |
| 6. Are there First Aid/CPR trained personnel available?                                | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            | <input type="checkbox"/> N/A |
| 7. Is a heat/cold stress monitoring program in place?                                  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            | <input type="checkbox"/> N/A |
| 8. Have First Aid/CPR trained personnel received Blood Borne Pathogen training?        | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 9. Have First Aid/CPR trained personnel been offered the Hepatitis B Vaccination shot? | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 10. Is there a written record of available if the Employee declines the shot?          | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO | <input type="checkbox"/> N/A |

#### F. Fire Protection

- |  |   |                             |                              |
|--|---|-----------------------------|------------------------------|
| 1. Has a fire alarm been established?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 2. Do employees know the location and use of all fire extinguishers on site? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 3. Are fire extinguishers marked and inspected monthly?                      | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 4. Are combustible materials segregated from open flames?                    | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |

#### G. Fire Prevention

- |  |   |                             |   |
|--|---|-----------------------------|---|
| 1. Has a smoking policy been established?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 2. Is smoking prohibited in flammable storage areas?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 3. Are fire lanes established and maintained?  | <input type="checkbox"/> YES            | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |
| 4. Are flammable dispensing systems grounded and bonded?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 5. Are proper receptacles (i.e., safety cans, cabinets) available for the storage of flammables? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 6. Are gasoline cans of the proper type (not plastic?)   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 7. Has the local fire department been contacted?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 8. Is ground and bonding equipment available?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 9. Are fuel tanks properly contained with a dike?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 10. Is the dyke capable of holding quantities being contained?                                   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |

### Section 3: Work Areas/Contamination Reduction Zone/Exclusion Zone

#### H. Walking and Working Surfaces

- |  |   |                             |                              |
|--|---|-----------------------------|------------------------------|
| 1. Are accessways, stairways, ramps, and ladders clean of ice, mud, snow, or debris? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 2. Are ladders within maximum length requirements?                                   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 3. Are ladders properly barricaded if used in passageways, doors, or driveways?      | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 4. Are broken or damaged ladders tagged and taken out of service?                    | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 5. Are metal ladders prohibited in electrical service areas?                         | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 6. Are stairways and floor openings guarded?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 7. Are safety feet installed on straight and extension ladders?                      | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 8. Is general housekeeping up to our standards?                                      | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 9. Are fall protection devices available on site?                                    | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 10. Are fall protection devices properly used and maintained?                        | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 11. Are ladders secured when in use?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 12. Is there a written Fall Protection Plan?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 13. Have employees received training in Fall Protection?                             | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |

#### I. Materials Handling

- |  |   |                             |                              |
|--|---|-----------------------------|------------------------------|
| 1. Are materials stacked and stored as to prevent sliding or collapsing?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 2. Are flammables and combustibles stored in non-smoking areas?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 3. Is machinery braced and lock-out/tag-out procedures in place?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 4. Are tripping hazards labeled?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 5. Are riders prohibited on materials handling equipment?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 6. Are OSHA approved manlifts provided for the lifting of personnel?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 7. Are all containers labeled as to contents?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 8. Are flammable liquids stored in approved safety cans?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 9. Are hoses secured and in good condition?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 10. If powered industrial trucks or fork lifts including "off road" forklifts are used, have operators been certified? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |

#### J. Hand and Power Tools

- |  |   |                             |   |
|--|---|-----------------------------|---|
| 1. Are defective hand and power tools tagged and taken out of service? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 2. Is eye protection available and used when operating power tools?    | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 3. Are guards and safety devices in place on power tools?              | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 4. Are hand and power tools inspected before each use?                 | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 5. Are spark-resistant tools available?                                | <input type="checkbox"/> YES            | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |
| 6. Are extension cords in good repair?                                 | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |

#### K. Slings and Chains ☐ N/A

- |   |   |                             |                              |
|---|---|-----------------------------|------------------------------|
| 1. Are damaged slings, chains, and rigging tagged and taken out of service? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 2. Are slings inspected before each use?                                    | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 3. Are slings padded or protected from sharp corners?                       | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |

4. Do employees keep clear of suspended loads? ☒ YES ☐ NO ☐ N/A

**L. Personal Protective Equipment (PPE)**

1. Have levels of PPE been established? ☒ YES ☐ NO ☐ N/A
2. Do all employees know their level of protection? ☒ YES ☐ NO ☐ N/A
3. Have respirator wearers been fit tested in the past year? ☒ YES ☐ NO ☐ N/A
4. Are respirators used, decontaminated, inspected, and stored according to standard procedures? ☒ YES ☐ NO ☐ N/A
5. Is defective PPE tagged? ☒ YES ☐ NO ☐ N/A
6. Does compressed breathing air meet CGA Grade "D" minimum? ☐ YES ☐ NO ☒ N/A
7. Are airlines monitored and protected? ☐ YES ☐ NO ☒ N/A
8. Are there sufficient quantities of safety equipment and repair parts? ☒ YES ☐ NO ☐ N/A
9. Is PPE and respiratory equipment properly used and maintained? ☒ YES ☐ NO ☐ N/A
10. Is hearing protection available for high noise? ☒ YES ☐ NO ☐ N/A
11. Is all PPE that has been used either disposed of or thoroughly cleaned prior to removal from any exclusion zone? ☒ YES ☐ NO ☐ N/A
12. Is there an adequate supply of PPE available? ☒ YES ☐ NO ☐ N/A
13. Are donning and doffing procedures identified? ☒ YES ☐ NO ☐ N/A
14. If SCBAs are on site, are they being inspected at least monthly? ☒ YES ☐ NO ☐ N/A

**M. Electrical**

1. Are warning signs exhibited on high voltage equipment (>250V)? ☒ YES ☐ NO ☐ N/A
2. Is electrical equipment and wiring properly guarded? ☒ YES ☐ NO ☐ N/A
3. Are electrical lines, extension cords, and cables guarded and maintained in good condition? ☒ YES ☐ NO ☐ N/A
4. Are extension cords kept out of wet areas? ☒ YES ☐ NO ☐ N/A
5. Is damaged electrical equipment tagged and taken out of service? ☒ YES ☐ NO ☐ N/A
6. Have underground electrical lines and utilities been identified by proper authorities? ☒ YES ☐ NO ☐ N/A
7. Are qualified electricians only allowed to work on electrical systems? ☒ YES ☐ NO ☐ N/A
8. Are lock-out/tag-out procedures in place when working with electrical systems? ☒ YES ☐ NO ☐ N/A
9. Are ground fault interrupter circuits used on all outdoor electrical hook-ups? ☒ YES ☐ NO ☐ N/A
10. Have the GFCIs been tested? ☒ YES ☐ NO ☐ N/A
11. Are there any open, exposed electrical panels on site? ☐ YES ☒ NO ☐ N/A

**N. Compressed Gas Cylinders** ☐ N/A

1. Are breathing air cylinders charged only to prescribed pressures? ☐ YES ☐ NO ☒ N/A
2. Are like cylinders segregated in well ventilated areas? ☒ YES ☐ NO ☐ N/A
3. Is smoking prohibited in cylinder storage areas? ☒ YES ☐ NO ☐ N/A
4. Are cylinders stored securely and upright? ☒ YES ☐ NO ☐ N/A
5. Are cylinders protected from snow, rain, etc.? ☐ YES ☒ NO ☐ N/A
6. Are cylinder caps in place before cylinders are moved? ☒ YES ☐ NO ☐ N/A
7. Are fuel gas and O2 cylinders stored a minimum of 20 feet apart? ☒ YES ☐ NO ☐ N/A

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**O. Scaffolding**☐ N/A

- |  |   |  |   |
|--|---|--|---|
| 1. Is scaffolding placed on a flat, firm surface?                                  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            | <input type="checkbox"/> N/A            |
| 2. Are scaffolding planks free of mud, ice, grease, etc.?                          | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            | <input type="checkbox"/> N/A            |
| 3. Is scaffolding inspected before each use?                                       | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            | <input type="checkbox"/> N/A            |
| 4. Are defective scaffolding parts taken out of service?                           | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            | <input type="checkbox"/> N/A            |
| 5. Does scaffold height exceed 4 times the width or base dimension?                | <input type="checkbox"/> YES            | <input checked="" type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 6. Does scaffold planking overlap a minimum of 12 inches?                          | <input type="checkbox"/> YES            | <input type="checkbox"/> NO            | <input checked="" type="checkbox"/> N/A |
| 7. Does scaffold planking extend over end supports between 6 to 18 inches?         | <input type="checkbox"/> YES            | <input type="checkbox"/> NO            | <input checked="" type="checkbox"/> N/A |
| 8. Are employees restricted from working on scaffold during storms and high winds? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            | <input type="checkbox"/> N/A            |
| 9. Are all pins in place and wheels locked?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO            | <input type="checkbox"/> N/A            |

**P. Personnel Decontamination**☐ N/A

- |  |   |                             |                              |
|--|---|-----------------------------|------------------------------|
| 1. Are decontamination stations set-up on site?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 2. Is a contamination reduction zone set-up on site?                                     | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 3. Are waste receptacles available for contaminated PPE?                                 | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 4. Are steps taken to contain liquids used for decon?                                    | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 5. Have decontamination steps and procedures been covered by the SSHO in site briefings? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 6. Is all PPE and respiratory equipment cleaned daily?                                   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |

**Q. Equipment Decontamination**☐ N/A

- |  |   |                             |                              |
|--|---|-----------------------------|------------------------------|
| 1. Has an equipment decon been established?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 2. Is contaminated wash water properly contained and disposed of?                        | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 3. Are all pieces of equipment inspected for proper decontamination before leaving site? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 4. Are all pieces of equipment being cleaned per HASP?                                   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |

**R. Welding and Cutting**☐ N/A

- |  |   |                             |                              |
|--|---|-----------------------------|------------------------------|
| 1. Are fire extinguishers present at welding operations?                                 | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 2. Are confined spaces such as tanks, tested prior to welding?                           | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 3. Are Hot Work Permits available?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 4. Are proper gloves, helmets, aprons available for welding?                             | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 5. Are welding machines properly grounded?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 6. Are spare oxygen and gas cylinders stored a minimum of 20 feet apart when not in use? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 7. Are only trained personnel permitted to operate welding and cutting equipment?        | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 8. Are welding screens available for use?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |

**S. Excavation, Trenching, and Shoring** ☐ N/A

- |   |   |                             |                              |
|---|---|-----------------------------|------------------------------|
| 1. Are employee protection systems in place to protect employees?                               | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 2. Are guardrails or fences placed around excavations near pedestrian or vehicle thoroughfares? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 3. Are utilities located and marked?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 4. Are ladders used in trenches over 4 feet deep?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 5. Is material excavated placed a minimum of 2 feet from the excavation?                        | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 6. Is a competent person designated for the excavation?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |

**T. Confined Spaces** ☐ N/A

- |  |   |                             |                              |
|--|---|-----------------------------|------------------------------|
| 1. Have employees been trained in the hazards of CS? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 2. Are CS entry permits available on site?           | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 3. Is a CS rescue team (on or off site) available?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 4. Are CS entry procedures being followed?           | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |

**U. Radiation** ☒ N/A

- |   |                              |                             |                              |
|---|------------------------------|-----------------------------|------------------------------|
| 1. Have employees been trained in the hazards of radiation or received Radiation Worker Training?       | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 2. Is the NRC Form 3 or Agreement State equivalent posted?  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 3. Does the site possess radiation detection instrumentation?   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 4. Has the instrumentation been calibrated in the past 12 months?                                       | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 5. Are the calibration papers on file for the instruments on site?                                      | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 6. Is dosimetry issued at the site?   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 7. Has NRC Form 4 been completed for individuals' assigned dosimetry?                                   | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 8. Are routine radiological surveys conducted in offices and break rooms?                               | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 9. Air monitoring program established?  | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 10. Have Radioactive Source Instruments been leaked checked in the past six months?                     | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 10. Do Radioactive Source Instruments have proper postings posted at storage locations?                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 11. Has a public dose exposure estimate been performed for Radioactive Source Instrument storage areas? | <input type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| If "yes" is annual dose to the public less than 100 mrem/yr?  | <input type="checkbox"/> YES | <input type="checkbox"/> NO |                              |

**Section 4: Equipment/Vehicles**

**V. Motor Vehicles**

- |  |   |                             |                              |
|--|---|-----------------------------|------------------------------|
| 1. Are vehicles inspected before each use?                           | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 2. Are persons licensed or certified for the equipment they operate? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 3. Are unsafe vehicles tagged and reported to supervision?           | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 4. Are vehicles shut down before fueling?                            | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 5. When backing vehicles, are spotters provided?                     | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 6. Is safety equipment on vehicles?                                  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |
| 7. Are loads secure on vehicles?                                     | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A |

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### W. Heavy Equipment

- |  |   |                             |   |
|--|---|-----------------------------|---|
| 1. Is heavy equipment inspected before each use?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 2. Is defective equipment tagged and taken out of service?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 3. Are project roads and structures inspected for load capacities and proper clearances?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 4. Is heavy equipment shut down for fueling and maintenance?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 5. Are back-up alarms installed and working on equipment?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 6. Have Operators been properly trained to operate the equipment they are using?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 7. Are riders prohibited on heavy equipment?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 8. Are guards and safety devices in place and used?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 9. Are barriers set up to prevent personnel from entering the area within the swing radius of track equipment?   | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 10. If not, are warning signs posted on both sides and the rear of track equipment warning employees to stay out of the swing radius and have site personnel been trained to stay out of the swing radius areas? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 11. Are annual inspection reports for all cranes available on site?  | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO | <input type="checkbox"/> N/A            |
| 12. In Michigan, are annual inspection reports for all track excavators available on site?   | <input type="checkbox"/> YES            | <input type="checkbox"/> NO | <input checked="" type="checkbox"/> N/A |

## Section 5: Comments and Recommendation (attach extra sheets if necessary)

## Item No.

[illegible]

# Sevenson Environmental Services, Inc.

## Health and Safety Inspection Summary Form

Inspection Date: April 24, 2002 Inspector: Paul Hitcho  
Site: Federal Creosote Superfund Site  
Project Manager: Gordon McDonald  
Superintendent: Perry Novak  
Site Safety and Health Officer: Eric Tschudi

### OPERATIONS REVIEWED:

OU-1 Phase 1 Lagoon B  
OU-2 Phase 1 14 Additional Properties

Corrective Measures Required? ☒ Yes ☐ No

If Yes, please briefly describe issues and suggested corrective measure(s). See completed Site Inspection Form for details.

Institute Bloodborne Pathogen Program  
Establish protection for gas compressed gas cylinders

April 26, 2002  
Date Prepared

Paul Hitcho  
Inspector Signature

Distribution: Director of Health and Safety (Paul Hitcho VP, Ph.D., CIH)  
Project Manager (Gordon McDonald)  
Superintendent (Perry Novak)  
Health and Safety Officer (Eric Tschudi)

500924





OU2, PHASE 1 - 14 ADDITIONAL PROPERTIES - W. O. - 03

CONTRACT NO. DACW41-01-D-0001 T.O. - 0001

PRE-FINAL PUNCHLIST - 8/06/02  
158 E. Camplain Rd.

Homeowner Meeting - Property Release Signed 6/05/02

Item #	Task	Contract Specification Section/Estimated Completion Date	SES P.O. Approval Initial/ Date	USACE Final Approval Initial/ Date
1	Sod along new sidewalk at back of property (warranty - monitor)	02922-Sodding 6/14/02	6/11/02 JC	
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Comments / Notes:

OU2, PHASE 1 - 14 ADDITIONAL PROPERTIES - W.O. - 03

CONTRACT NO. DACW41-01-D-0001 T.O. - 0001

PRE-FINAL PUNCHLIST - 8/06/02  
160 E. Camplain Rd.

Homeowner Meeting - Property Release Signed 6/04/02

Item #	Task	Contract Specification Section/Estimated Completion Date	SES P.O. Approval Initial/ Date	USACE Final Approval Initial/ Date
1	Re-seed along driveway and protect with erosion material.	02921-Seeding 6/14/02	6/5/02 JC	
2	PSE&G - repair of gas valve shut-off cover.	Miscellaneous Restoration 6/14/02	6/8/02 JC	
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Comments / Notes:

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OU2, PHASE 1 - 14 ADDITIONAL PROPERTIES - W.O. - 03

CONTRACT NO. DACW41-01-D-0001 T.O. - 0001

PRE-FINAL PUNCHLIST - 8/06/02  
166 E. Camplain Rd.

Homeowner Meeting - Property Release Signed 6/19/02

Item #	Task	Contract Specification Section/Estimated Completion Date	SES P.O. Approval Initial/ Date	USACE Final Approval Initial/ Date
1	Flower bulbs are to be provided by Elite in the Fall when available	02930-Exterior Planting 6/14/02	11/1/2002 JC	
2	New wooden picket fence - repair concrete at base of posts, stain to match original, remove protruding nails.	02821-Fencing 6/14/02	6/6/02 JC - NO STAIN	
3	Sod replacement along driveway	02922-Sodding 6/14/02	6/10/02 JC	
4	Replace complete public sidewalk	02770-Concrete sidewalks, curbs & gutters Work to be done during WO-02 sidewalk restoration	6/26/2002	
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Comments / Notes:

500929



OU2, PHASE 1 - 14 ADDITIONAL PROPERTIES - W. O. - 03

CONTRACT NO. DACW41-01-D-0001 T.O. - 0001

PRE-FINAL PUNCHLIST - 8/06/02  
189 E. Camplain Rd.

Homeowner Meeting - Property Release Signed 6/05/02

Item #	Task	Section/Estimated Completion Date	SES P.O. Approval Initial/ Date	USACE Final Approval Initial/ Date
1	Verify first mowing of new sod	02922-Sodding Scheduled for 6/07/02	6/8/02 JC	
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Comments / Notes:

OU2, PHASE 1 - 14 ADDITIONAL PROPERTIES - W.O. - 03

CONTRACT NO. DACW41-01-D-0001 T.O. - 0001

PRE-FINAL PUNCHLIST - 8/06/02

195 E. Camplain Rd.

Homeowner Meeting - Property Release Signed 6/19/02

Item #	Task	Contract Specification Section/Estimated Completion Date	SES P.O. Approval Initial/ Date	USACE Final Approval Initial/ Date
1	Verify first mowing of new sod	02922-Sodding Scheduled for 6/07/02	6/8/02 JC	
2	Replace Japanese cut-leaf maple tree	02930-Exterior Planting 6/14/02	6/10/02 JC	
3	Repair sod joints with topsoil/seed following first mowing	02922-Sodding 6/14/02	6/10/02 JC	
4	Replace (monitor) sod in median	02922-Sodding 6/14/02	6/10/02 JC	
5	Replace Azalea (purple) and Rose bush (yellow)	02930-Exterior Planting 6/14/02	6/19/02 JC	
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Comments / Notes:

500931

OU2, PHASE 1 - 14 ADDITIONAL PROPERTIES - W.O. - 03

CONTRACT NO. DACW41-01-D-0001 T.O. - 0001

PRE-FINAL PUNCHLIST - 8/06/02

201 E. Camplain Rd.

Homeowner Meeting - Property Release Signed 6/04/02

Item #	Task	Contract Specification Section/Estimated Completion Date	SES P.O. Approval Initial/ Date	USACE Final Approval Initial/ Date
1	Verify first mowing of new sod	02922-Sodding Scheduled for 6/07/02	6/8/02 JC	
2	Repair sod joints with topsoil/seed following first mowing	02922-Sodding 6/14/02	6/10/02 JC	
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Comments / Notes:

OU2, PHASE 1 - 14 ADDITIONAL PROPERTIES - W.O - 03

CONTRACT NO. DACW41-01-D-0001 T.O. - 0001

PRE-FINAL PUNCHLIST - 8/06/02  
207 E. Camplain Rd.

Homeowner Meeting - Property Release Signed 6/04/02

Item #	Task	Contract Specification Section/Estimated Completion Date	SES P.O. Approval Initial/ Date	USACE Final Approval Initial/ Date
1	Re-seed area in backyard	02921-Seeding 6/14/02	6/5/02 JC	
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Comments / Notes:

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OU2, PHASE 1 - 14 ADDITIONAL PROPERTIES - W.O. - 03

CONTRACT NO. DACW41-01-D-0001 T.O. - 0001

PRE-FINAL PUNCHLIST - 8/06/02  
222 E Camplain Road

Homeowner Meeting - 6/04/02 @ 5:30 PM Property Release Signature Pending

Item #	Task	Contract Specification Section/Estimated Completion Date	SES P.O. Approval Initial/ Date	USACE Final Approval Initial/ Date
1	Powerwash driveway	Miscellaneous Restoration 6/14/02	6/11/02 JC	
2	Seed along fence by driveway	02921-Seeding 6/14/02	6/4/02 JC	
3	Gate in fence along side of house (missed)	02821-Fencing 6/14/02	6/3/02 JC	
4	Match paint by Bilco door to the house color	Miscellaneous Restoration 6/14/02	N/A - Homowner has house paint and will take care of	
5	Verify first cut / mow	02922-Sodding Scheduled for 6/07/02	6/10/02 JC	
6	Rear stockade fence gate latch	02821-Fencing 6/14/02	6/3/02 JC	
7	More mulch along 222/228 line	02930-Exterior Planting 6/14/02	6/3/02 JC	
8	Mulch, seed, & topsoil along 216/222 line	02921-Seeding 6/14/02	8/07/02 JC	
9	Plant bulbs - Elite to supply / install in Fall	02930-Exterior Planting 6/14/02	2-Coreopsis Verticula "Moonbeam" var. are to be substituted. 6/06/02 JC	
10	Plant peonys	02930-Exterior Planting 6/14/02	6/3/02 JC	
11	Swingset Area - Remove rear board and taper side boards so that ther is no "trench" between fence and play area.	Miscellaneous Restoration 6/14/02	6/5/02 JC	
12	Manual and Specifications for new A/C unit.	Miscellaneous Restoration 6/14/02	Left in Basement	
13	Tree by 222/228 fence line at rear of house was discussed	02930-Exterior Planting	No Action - Original tree was 228's	
14	Clean out storm/sump pump discharge line at rear of property on CSX Right-of-Way	Miscellaneous Restoration 6/14/02	6/11/02 JC	
15	Plug for gas line	Miscellaneous Restoration 6/14/02	6/5/02 JC	
16	Move second arborvitae from 222/228 property line towards first one. (split spacing difference)	02930-Exterior Planting 6/14/02	6/5/02 JC	
17	Electrical switch for exterior spotlight.	Miscellaneous Restoration 6/14/02	6/6/02 JC	
18	Tighten all swingset tie- downs/anchors	Miscellaneous Restoration 6/14/02	6/5/02 JC	
19	Add mulch to two Zelkova trees	02930-Exterior Planting 6/14/02	Replaced on 6/10/02	
20	Raise grade at rear of property 216/222 property line under fence (close up gap)	02922-Sodding 6/14/02	6/19/02 JC	
21	Trim dead/damaged leaves off arborvitae	02930-Exterior Planting 6/14/02	6/10/02 JC	
22	Make sure grass is watered near shed	02922-Sodding 6/14/02	Daily as applicable	
23	Re-grade around telephone poles at front of property following sidewalk restoration	Miscellaneous Restoration 6/14/02	6/19/02 JC	

OU2, PHASE 1 - 14 ADDITIONAL PROPERTIES - W.O. - 03

CONTRACT NO. DACW41-01-D-0001 T.O. - 0001

Item #	Task	Contract Specification Section/Estimated Completion Date	SES P.O. Approval Initial/ Date	USACE Final Approval Initial/ Date
24	Touch-up trim on new shed (bottom of doors, left front corner, etc.)	Miscellaneous Restoration 6/14/02	6/11/02 JC	
25	Verify if tree wraps can be removed from Zelkovas	02930-Exterior Planting 6/14/02	Replaced on 6/10/02	
26	Change lock on shed (replace SES lock with homeowners when provided)	Miscellaneous Restoration 6/14/02	6/17/02 JC	
27	Monitor Zelkova progress (warranty)	02930-Exterior Planting 6/14/02	Replaced on 6/10/02	
28	Repair leaks in new bilco door	Miscellaneous Restoration 6/14/02	6/7/02 JC	
29	Mulch between shed and driveway (add)	02930-Exterior Planting 6/14/02	6/7/02 JC	
30	Remove telephone wires from utility pole	Miscellaneous Restoration 8/06/02	8/7/02 JC	
31	Remove signage from utility pole	Miscellaneous Restoration 8/06/02	8/7/02 JC	

Comments / Notes:

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OU2, PHASE 1 - 14 ADDITIONAL PROPERTIES - W. O. - 03

CONTRACT NO. DACW41-01-D-0001 T.O. - 0001

PRE-FINAL PUNCHLIST - 8/06/02  
228 E Camplain Road

Homeowner Meeting - Property Release Signed 6/13/02

Item #	Task	Contract Specification Section/Estimated Completion Date	SES P.O. Approval Initial/ Date	USACE Final Approval Initial/ Date
1	Verify first mowing of new sod	02922-Sodding Scheduled for 6/07/02	6/10/02 JC	
2	Replace sod along 228/234 property line	02922-Sodding 6/14/02	6/10/02 JC	
3	Compact soil around fence posts at rear property fence (jumping jack)	02821-Fencing 6/14/02	6/11/02 JC	
4	Trim Quince bush (monitor)	02930-Exterior Planting 6/14/02	6/10/02 JC	
5	Remove ribbon from arborvitaes	02930-Exterior Planting 6/14/02	Replaced All on 6/10/02 JC	
6	Remove survey stakes/markers left on property	Miscellaneous Restoration 6/14/02	6/10/02 JC	
7	Lower clothesline pole (level)	Miscellaneous Restoration 6/14/02	6/6/02 JC	
8	Put putty around electrical conduit on house	Miscellaneous Restoration 6/14/02	6/11/2002 JC	
9	Add topsoil under sod at lowspot near the electrical conduit on the house	02922-Sodding 6/14/02	6/6/02 JC	
10	Verify all arborvitaes are the Green Giant" variety	02930-Exterior Planting 6/14/02	Replaced All on 6/10/02 JC	
11	Staighthen and re-mulch Japanese Maple Tree	02930-Exterior Planting 6/14/02	6/6/02 JC	
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Comments / Notes:

OU2, PHASE 1 - 14 ADDITIONAL PROPERTIES - W.O. - 03

CONTRACT NO. DACW41-01-D-0001 T.O. - 0001

PRE-FINAL PUNCHLIST - 8/06/02  
234 E Camplain Road

Homeowner Meeting - Property Release Signed 6/12/02

Item #	Task	Section/Estimated Completion Date	SES P.O. Approval Initial/ Date	USACE Final Approval Initial/ Date
1	Verify first mowing of new sod	02922-Sodding Scheduled for 6/07/02	6/10/02 JC	
2	Replace sod behind new shed	02922-Sodding 6/14/02	6/10/02 JC	
3	Install support on inside of shed door	Miscellaneous Restoration 6/14/02	6/13/02 JC	
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Comments / Notes:



## PRE-FINAL PUNCHLIST - 8/06/02

240 E Camplain Road

## Homeowner Meeting - Property Release Signed 6/14/02

Item #	Task	Contract Specification Section/Estimated Completion Date	SES P.O. Approval Initial/ Date	USACE Final Approval Initial/ Date
1	Verify first mowing of new sod	02922-Sodding Scheduled for 6/07/02	6/10/02 JC	
2	Replace sod behind new shed with 3/4" clean stone and box in area with 4x4 timbers and anchor with re-bar	Miscellaneous Restoration 6/14/02	6/12/02 JC	
3	General cleanup on CSX Right-of-Way	Miscellaneous Restoration 6/14/02	6/11/02 JC	
4	Re-install support wire at bottom rear property fence (weave)	02821-Fencing 6/14/02	6/11/02 JC	
5	Replace sod around clothesline pole and near 240/246 property line	02922-Sodding 6/14/02	6/10/02 JC	
6	Add two full rows of pavers to pad where grill is currently located	Miscellaneous Restoration 6/14/02	6/10/02 JC	
7	Touch-up brown paint on rear fence	02821-Fencing 6/14/02	6/10/02 JC	
8	Turn bolt heads to inside of rear fence (nuts to CSX side)	02821-Fencing 6/14/02	6/5/02 JC	
9	Fence at 234/240 property line - raise 3rd and 4th line posts (from street) to level off top rail	02821-Fencing 6/14/02	6/11/02 JC	
10	Tighten up same fence (get rid of bows/kinks)	02821-Fencing 6/14/02	6/11/02 JC	
11	Remove sod near 4th line post on 234/240 property line add topsoil and replace sod to remove low spot	02922-Sodding 6/14/02	6/11/02 JC	
12	Adjust eye bolts on clothesline pole to straighten pulleys	Miscellaneous Restoration 6/14/02	6/10/02 JC	
13	Repair sod joints (where new sod meets existing turf) with topsoil/seed following first mowing	02922-Sodding 6/14/02	6/10/02 JC	
14	Remove survey stakes/markers left on property	Miscellaneous Restoration 6/14/02	6/10/02 JC	
15	Replace 4x4 timbers along CSX side of rear property fence and anchor with rebar	Miscellaneous Restoration 6/14/02	6/13/02 JC	
16	Lower 1st line post from 240/246 property line by 1" to level top rail & lower fence fabric the same amount	02821-Fencing 6/14/02	6/11/02 JC	
17	Paint clothesline pole brown	Miscellaneous Restoration 6/14/02	6/10/02 JC	
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**Comments / Notes:**

Homeowner/USEPA wants to meet June 10th and then on June 14th after work is completed. USEPA will confirm dates and time.

OU2, PHASE 1 - 14 ADDITIONAL PROPERTIES - W.O. - 03

CONTRACT NO. DACW41-01-D-0001 T.O. - 0001

PRE-FINAL PUNCHLIST - 8/06/02  
255 E Camplain Road

Homeowner Meeting - Property Release Signed 5/11/02

Item #	Task	Contract Specification Section/Estimated Completion Date	SES P.O. Approval Initial/ Date	USACE Final Approval Initial/ Date
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**Comments / Notes:**

No Items noted as outstanding as of 6/03/02

OU2, PHASE 1 - 14 ADDITIONAL PROPERTIES - W.O. - 03

CONTRACT NO. DACW41-01-D-0001 T.O. - 0001

PRE-FINAL PUNCHLIST - 8/06/02  
104 Louise Drive

Homeowner Meeting - Property Release Signed 6/12/02

Item #	Task	Contract Specification Section/Estimated Completion Date	SES P.O. Approval Initial/ Date	USACE Final Approval Initial/ Date
1	Replace Hostas along back of house	02930-Exterior Planting 6/14/02	6/07/02 JC	
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Comments / Notes:

OU2, PHASE 1 - 14 ADDITIONAL PROPERTIES - W.O. - 03

CONTRACT NO. DACW41-01-D-0001 T.O. - 0001

PRE-FINAL PUNCHLIST - 8/06/02  
22 Florence Court

Homeowner Meeting - Property Release Signed 6/18/02

Item #	Task	Contract Specification Section/Estimated Completion Date	SES P.O. Approval Initial/ Date	USACE Final Approval Initial/ Date
1	Re-caulk seam in public sidewalk (fill gap)	02770-Concrete sidewalks, curbs & gutters 6/14/02	6/5/2002 JC	
2	Yew Bush (monitor)	02930-Exterior Planting May be a warranty item	6/5/2002 JC	
3	Fix rut between curb and sidewalk - Topsoil/Seed	02921-Seeding 6/14/02	6/18/2002 JC	
4	Clean debris in median	Miscellaneous Restoration 8/07/02	8/07/2002 JC	
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Comments / Notes:

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION II

DATE: July 3, 2002

SUBJECT: Final Inspection of OU2, Phase 1 Properties

FROM: Rich Puvogel, Remedial Project Manager  
Central New Jersey Remediation Section *RP.*

TO: File

This memo documents the final inspection of the OU2, Phase 1 properties, also known as the 14 properties. The inspection was conducted by myself and the New Jersey Department of Environmental Protection project manager, Drew Sites.

The inspection of the 14 properties was conducted at 2:30 PM on the afternoon of July 2, 2002. During the final inspection of the 14 properties Mr. Sites and I walked through each of the properties and inspected newly planted ground cover, trees, shrubs, and replacement fencing, drainage swales, curbing, gutters, and sidewalks.

Mr. Sites and I identified no issues during the final inspection and considered the work complete.